Purchase Intention on Online Content Services: An Application to the Music Streaming Services

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Biographical Note

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Abstract

The web revolution changed the way how consumers behave. Nowadays, consumers are less loyal and more willing to consume new products and services, or to access them in a different way. Internet has contributed to such consumption and cultural diversity, bringing a wide variety of options where there were few, both in terms of contents and experiences. The possibility to access content online, which used to be available offline or physically, definitely revolutionize consumer behavior and the consequences for organizations must not be undermined.

In order to understand what has changed in this field, the aim of this study is to fill a research gap by analyzing users' purchase intention towards online content, namely music streaming services. A research model was developed in order to assess determinants and moderators that can improve predictions of purchase intention. By combining the Technology Adoption Model (TAM) and the Value-based Adoption Model (VAM), the framework adopted considers technicality, perceived usefulness, perceived enjoyment, perceived value and perceived fee as direct and indirect determinants of purchase intention of music streaming services, while considering the moderating role of users' age and gender. Data was collected through a survey to a convenience sample of 318 Portuguese users of online music services.

Findings show that perceived value (positive) and perceived fee (negative) are both significant in explaining users' intention to purchase music streaming services. However, perceived fee was found to have a greater impact, suggesting that, despite finding the service valuable, the fee involved is the main aspect that influences users' purchase intention. Regarding the moderators, technicality varies significantly according to age, while purchase intention according to both age and gender.

The current research attempts to contribute to a deeper understanding of the purchase intention towards music streaming services (a relatively new kind of service) and be the basis for future research in this field.

Key-words: online content services, music industry, purchase intention, perceived fee

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1. Introduction

Nowadays, with the current and constant development in the online content service industry becomes necessary to understand the drivers that affect the consumers' intention to purchase online and the impacts for the management. The evidences that prove such expansion on online content services are everywhere, e-books, online games, e-learning, music and video streaming and online newspapers are good examples of that (Joo and Sohn, 2008).

Thanks to the exponential growth of technology associated to Internet, now is possible to have access to a wide range of online services. This development brings new business models to many activities that had to readapt to a new reality in order to keep on track on this new era. According to a recent study from the European Parliament (2014) about online access to content and services, the customers will be increasingly more interested to access content in a multi-device and platform way (Maciejewski et al., 2014).

The current study aims to fill a research gap, providing theoretical and practical explanations of consumer behavior toward online content services, on the music field. The music industry has been through several changes in recent years. With the increasing impact of internet on users' life, the revenues from physical products sales drop dramatically. Even services based online (online stores) appear to be threaten either by illegal file-sharing or the rise of subscription and streaming services. The providers of the latter seem to be trying to provide the best of both worlds. By one side it is provided a free tier, in which the users do not have to pay to listen to music. Simultaneously, is available a paid tier where the customers need to pay to access the a upgraded version of the service. In short, it is a freemium model. Despite the rise of this type of online service, the reality demonstrates that the portion of those who pay a fee to access the service is still relatively low. As Warr and Goode (2011) stated, now, more than ever, research is needed to understand customers' behavior and what drives them in this field so as to design an effective solution. The research questions will be the following ones: (i) what are the drivers and inhibitors of consumers' intention to purchase in online content services? (ii) what is the moderating role of consumer characteristics? Prior studies in this field will be the basis of this study, but in addition to that, data collection will be done through a survey to Portuguese users of music streaming services.

In the subsequent sections of the study, it is presented a literature review of what has been investigated in this field, followed by the analysis of the respective methodologies and the method of analysis of the current research. Afterwards, there is proceeded the data analysis with the results and then discussed the implications and the respective conclusions.

2. Literature Review

In this section, the literature review is conducted. This includes the characterization of the music industry, as well as the analysis of the main models and concepts applied in this field. Afterwards, some similar studies are addressed with the respective critical analysis and main contribution to the current research.

2.1 Music Industry

The internet and new technologies produced a shift in the way people experience some services. Nowadays, people can easily read a book, see a movie or just speak with their friends through online services (Joo and Sohn, 2008). Some of them access these services legally, others do not. But the legality is not the main concern of this study. What really matters is to understand the impact of new technologies in the way people use some products or service and consequently perceive their respective value and intention to purchase.

Doubtlessly, the music industry was one the fields who has witnessed the most relevant changes due to new technologies (Warr and Goode, 2011). The music experience for a listener is completely different when compared to what it was 15 years ago. It is safe to say that the different players on the equation are facing the most significant revolution, even bigger than others like e. g. the shift from vinyl to CD's.

2.1.1 The Evolution

Steve Albini, Shellac´s frontman, presented, in his speech at the Melbourne's *Face the Music* conference, a thorough portrayal of the music industry's evolution and role internet played on that. Albini called the "pre-internet era" to the period between the 1970's and 1990's. In this period, the record companies were the main player in the market, and the experience of music was reduced to records and radio. The industry was confined to producing an album and the consequent tour of concerts, Albini confirmed that "the whole industry depended on these sales, and sales depended on exposure. Bands on big labels toured, essentially to promote their recordings. And the labels provided promotional and logistical support to keep the bands on the road." But other players had their stake of influence on this equation. Radio stations, retail outlets, DJ's or specialized journalists had a decisive role on spreading music. However, only big bands with professional and influential support could survive in this environment. A lot of bands irretrievably died without having the opportunity to make a record.

Nevertheless, the digitization of music and the internet brought significant modifications into the music field, in terms of manufacturing, distribution, promotion and consumption. The industry structure, which is composed by major record companies, smaller indie labels, music retailers (chains and independent stores), recording studios and artists (Warr and Goode, 2011) has suffered deep modifications. In this segment, the changes mean that digital methods of distributing music have increased in value whilst traditional manufacturing and sales methods have decreased,

according to Bockstedt et al. (2005; cited in Warr and Goode, 2011). Now, the artists themselves make their own decisions concerning marketing and promotion of their records, putting in serious danger the record companies. According to Fox (2004, p. 5) "the distribution of music over the internet requires only a single master copy, whereas distribution of music as physical product requires producing, shipping and warehousing CD's, audio cassettes, etc. When music is stored and as a computer file, disintermediation (the cutting out of middle layers of distribution channels) occurs". In fact, nowadays it is easier for a small band to be known outside the label's (record companies) spectrum, something unattainable before. First of all, in terms of technical issues related with the music construction itself, as Albini explained "computers now come pre-loaded with enough software to make a decent demo recording and guitar stores sell microphones and other equipment inexpensively that previously was only available at a premium from arcane specialty sources". But, besides and more important than that, they have countless available tools to promote it online. The easy access to music through internet changed the way how music is listened to by consumers. This conveys the idea that if the music industry appears to be shrinking, artists and fans can interact directly. Fans everywhere can listen to every file of a band, blurring national boundaries. This openness brought by internet created a wide range of perspectives for the fans that are now more willing to see live performances and to establish a personal relationship with the band.

The discussion of music went also worldwide; there are online communities for every music style, as emphasized by Albini. Nowadays, blogs or social networks (Facebook or Twitter) are the main channels. This new consumer profile brought different challenges for the players in the industry. The bands, regardless of their size, have to adapt, redesign their approach. For example, some of them even built their own record labels; they had to learn to conduct their own business. Also the big record companies are having difficulties to deal with the rise of internet. Once a band releases a song online, it is out of their control, it can be copied and broadcasted anywhere, it is impossible to control it. Easily people can download, stream, or see the video of a song and "in the blink of an eye music went from being rare, expensive and only available through physical media in controlled outlets to being ubiquitous and free worldwide" as it is stressed by Albini.

2.1.2 Digital Music

Digital music came to stay. According the International Federation for Phonographic Industry (IFPI)[1], the industry's digital revenues grew 4.3% to $5.9 billion, in 2013. The growth was in revenues and user numbers for subscription services, continued revenue growth from ad-supported services and stable income from download sales. Shortly, digital represents 39% of total industry revenues (Figure 1).

[1] In *IFPI Digital Music Report 2014*

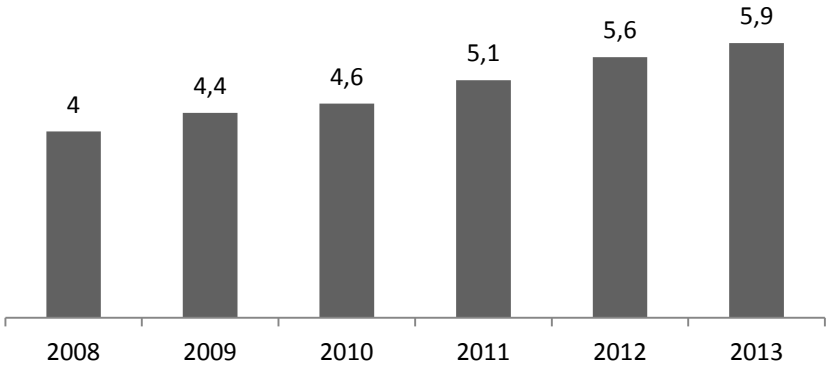

Figure 1: Global Digital Revenues 2008-13 (US$Billions)

For example, many subscription services, like Deezer or Spotify, have overcome $1 billion of sales in 2014, which shows the recent tendency for fans to pay for music online. In Europe, the music revenues grew for the first time in 12 years. Table 1 summarizes the revenue distribution stream per type, where is possible to compare the different performances in 2014.

Table 1: Distribution of revenue stream per type (Source: *IFPI Digital Music Report 2014*)

Type of revenue stream	Growth
Subscription streaming	Increasing number of paying subscribers to subscription services from 8 million in 2010 to 28 million in 2013 Revenues from music subscription services — including free-to-consumer and paid-for tiers — grew by 51.3% in 2013
Digital Download Model	Downloads still account for a substantial two-thirds of digital revenues (67%), however the revenues globally fell slightly by 2.1% in value
Performance Rights	Performance rights income was $1.1 billion globally in 2013, increasing by an estimated 19% in 2013, more than double the growth rate in 2012, and accounting for 7.4% of total record industry revenue
Physical formats	Physical formats account for 51.4% of all global revenues, compared to 56.1% in 2012. However, major markets including saw a slow-down in the rate of physical decline.

2.1.3 Online Music Stores Business Model: The example of iTunes

Digital Music came up, at least legally, with the release of iTunes by Apple in 2001. Launched as a way to struggle the illegal piracy, this service was the first attempt of the industry to persuade consumers to listen to music legally through digital mediums (von Walter and Hess, 2003; Arditi, 2014). iTunes was basically a "à-la-carte" store where buyers can purchase a single song, at a standard price of $0.99, and is an intermediary between the record labels and consumers. It uses algorithms to help consumers choose music according to their preferences. Illegal file-sharing in P2P networks proved to be something irreversibly and fashionable and the providers came to a point where had to take action. As Arditi (2004, p. 11) referred "Major record labels have realized that the digital distribution of music is not going to go away (…) iTunes and other online music stores create a platform to direct digital content towards consumers while generating profits to the major record labels". Provided that, Apple saw in iTunes an alternative with attractive features in an ecosystem where consumers could pay and manage their content easily and quickly.

The subsequent years after the iTunes launching helped to validate its concept. According IFPI digital revenue grew from $400 thousand in 2003 to $2,3 million in 2008, and in 2010 one third of music revenue came from digital sources, being iTunes the main responsible for these figures.

iTunes became progressively more fashionable among music consumers due to its compelling features. The interconnection with the hardware iPod made music something wearable and portable; people could carry out their favorite song wherever and whenever they want. Jeff Price[2], founder of TuneCore and co-founder of spinART Records, stated that "Apple made music ubiquitous in a way it never was before. And they set music free from large PC's. Earlier MP3 players did that, too, but not like this. That ubiquitousness has driven a consumption of music that is unparalleled in the history of the world". One consequence of that was the decline of the physical record stores. Mark Guarino[3] referring to the advantages of the digital distribution over the traditional, claimed that "(digital distribution) is immediate, affordable, and democratic, allowing anyone from young children to seniors a way to buy music without needing to step outside the house". Estimation from the NPD Group[4] highlights the fact that, from 2007 to 2010, music sales of physical stores came from 80% to 64% of total music sales, with the corresponding increase of digital sales.

Other situation that exemplifies the success of iTunes in digital music environment was the creation of DRM (Digital Right Management)-free in 2007. Formerly, DRM was created as a source of protecting the file available on an online music store, a way to prevent illegal file-sharing. For example, a person who had bought a file in iTunes could only listen to it in an iPod. Then, with DRM-free any service had more chances to compete in this market once. As noticed by Sinha et al. (2010), legal products were more appealing and consumers were more willing to pay for them since the providers

[2] Cited in *Billboard*, April 2013
[3] In an article in *The Christian Science Monitor*, February 2010
[4] In an article in *The Christian Science Monitor*, February 2010

could lower the prices. Provided that, it is clear that Apple would be facing more competitors in the market. However, Apple managed to keep the same pace and stay on the leadership in what concerns online music stores. For instance, in 2012, according to the NPD group, Apple held 64% of digital music sales' market share. Their alluring ecosystem, with the interconnectivity with the software, hardware and content management, was the key to success and any kind of competitor could be defeated from the beginning.

In short, with the launching of iTunes, Apple was able to provide a source that struggle illegal piracy, through an innovative and appealing platform, carrying out the respective payment to labels and artists.

However, as it is presented in Table 1, 2014 did not bring good news to iTunes and to online music stores who sell downloads to its users. The music streaming services were increasingly the first choice to listen to music online which represents a big challenge to the product iTunes in particular and to Apple in general. Michael McDonald[5], co-founder of ATO Records, stated that younger generations can discard the idea of music ownership, since for them what matters is listening to a song, not to own it. This can represent a huge setback to online music stores. Therefore, understand what customers really value, in an online music service, becomes more important than ever, in order to redesign these services according to their preferences.

2.1.4 Rise of streaming subscription models

Streaming and subscription models (music streaming services) are growing. Global services, such as Deezer or Spotify, have been licensed worldwide. These streaming services, that provide unlimited access to music and enhance discovery, seem to be reducing piracy. According to the IFPI[6], a GfK research in Sweden in 2013 concluded that 9 in 10 paying users of Spotify do not download illegally so often. But, in addition to Spotify, there are other examples of good performances of this kind of services. Google Play Music All Access was the fastest-growing subscription service in 2013. For Zahavanah Levine, director of global music partnerships for Android, although subscription's revenue is still lower when compared to other sources, it is clearly "growing fast". In Great-Britain, according the British Phonographic Industry (BPI), 14.8 billions of tracks were streamed last year, doubling the 7.5 billions of 2013. Charles Arhur[7] stressed that, in comparison with the download system, streaming has some decisive advantages like the possibility to reach millions and millions of tracks, to create and share playlists, to discover new music easily or the effortlessness of listening to music almost anywhere. These subscription services are becoming popular for people who do not want to buy a download or a physical CD.

There are signs that streaming can overcome the slice, in terms of revenue, of downloads sooner than expected. Table 2 portrays exactly that, giving the example of some influential countries.

[5] Cited in the *Daily News*, April 2013
[6] In *IFPI Digital Music Report* 2014
[7] In an article in *The Guardian*, January 2015

With so optimistic results and prospects it was not surprising to see some big brands interested in taking part of this equation. With the acquisition of Beats Music, Apple is ready to add a streaming service to its portfolio. It is believed that, given that the iPhone owners are normally big spenders, it will not be difficult to convert them into paying users.

Table 2: Percentage in the total digital revenue (Source: *IFPI Digital Music Report 2014*)

Country	Percentage of the total digital revenue			
	2012		2013	
	Subscriptions	Downloads	Subscriptions	Downloads
Sweden	48%	11%	47%	7%
France	36%	10%	36%	9%
United States	19%	28%	23%	27%
United Kingdom	19%	33%	22%	23%
Germany	12%	25%	12%	21%

Google is also set to introduce the Youtube Music Key, a service on Youtube that sets up a subscription fee to a premium service. Nevertheless, this new service may be facing a big setback, since Youtube is already considered as the largest unofficial streaming service in the world. Therefore, since people already use it to find songs and related artists (similar to regular streaming services) for free, they may not be willing to pay.

Moreover, some problems arose with the business model of the so-called music streaming services. Record companies are pressuring e. g. Spotify to leave their "freemium" model. Not satisfied with the for-free tier of the service, some record companies claimed that this system is jeopardizing both physical and digital sales. Charles Arthur[8] referred that if we see streaming as new radio, it is difficult to persuade someone to pay in order to listen to it. Spotify members replied with the assumption that without the free tier of the service, the premium part would never be enhanced. Spotify has currently 50 million active users, on which 12.5 million are paying subscribers and has already paid out more than two billion dollars to the record labels, publishers, distributors and artists. More people supported Spotify in this discussion. Tom Corson[9], president of the RCA Record, believes that this "all-you-can eat" access model can sooner be translated into paying subscribers. Richard Jones[10], Pixies' manager, emphasized the idea that "Particularly for artists who are established with solid catalogues and are big live-touring acts, streaming services can be extremely beneficial, I am a massive supporter." According to him, if streaming and subscription services are good for listeners, they will also be good for artists, given that people will know more bands and will be willing to experience them in a live-act.

[8] In an article in *The Guardian*, January 2015
[9] Cited by Seabrook in *The New Yorker*, November 2014
[10] Cited by Seabrook in *The New Yorker*, November 2014

2.1.5 Subscription and streaming services' business model: The Spotify example

All the concern regarding the subscription and streaming services' business model prompt the importance to understand it deeply. To do that, some aspects that constitute the basis of their business model are presented, following the example of Spotify.
To be able to provide their users the music they want to listen, that music needs to be available to subscription and streaming services. To do that, they have to negotiate with the respective record labels (majors or indie) to release that license for them.
Taking the Spotify's example, the royalty rate per stream depends on factors such as popularity, the relevance of the country, the type of subscription (free-ad supported streams worth less than paid subscriber streams). Spotify reveals that the average stream worth six-tenths and eight-tenths of a cent (150 streams makes 0.99 dollars or Euros). Table 3 reflects the Spotify's payouts.

Table 3: Spotify's Payouts (Source: *The New Yorker*)

Artist's Share	Revenue's Share
	Artist's Share×Monthly Revenues (30% to Spotify)
$\frac{Monthly\ streams\ of\ a\ single\ artist's\ work}{Total\ number\ of\ streams\ on\ Spotify\ that\ month}$	Artist's Share×Monthly Revenues (70% to Record Labels - that distribute to artists according their deals)

John Seabrook[11] noticed that Spotify was trying to leverage its portfolio of managers and artists, offering future royalties, based on growth projections. He presented some examples "A niche indie album, which now earns 33 hundred dollars a month, will receive 17 thousand dollars in royalties a month when Spotify hits 40 million paid subscribers". He kept on "A global hit album, currently earning 425 thousand dollars a month will get 2.1 million dollars." These projections reflect the Spotify's belief that streaming is something with potential growth.
Coming back to the Spotify example, as Thomas Hesse[12], who led the negotiation for Sony, recognized, record labels were not convinced with the free tier of the service. Although it was demanded a subscription fee for people who want to listen on their mobile devices, something that was still a source of trouble once it was unpredictable how much paid users could Spotify catch. After Sony, Universal and Warner also joined Spotify. The exact terms of the deals were not public, but, according John Seabrook, after that, Spotify had to share 70% of its earning with the major record labels and the latter also got equity in the subscription and streaming service, owning approximately 15% of Spotify, putting at risk the sustainability of its business model. Spotify operated losses in 2013 (paid more in fees than its revenues) and provided that the deals were renewed every two or three years, the better the performance of Spotify, the more the record labels ask for. It seems there are no economies of scale in this business model;

[11] In an article in *The New Yorker*, November 2014
[12] Cited by Seabrook in *The New Yorker*, November 2014

the scale does not erode the licensing fees. In short, as John Seabrook noticed "The way the consumer gets access to music has changed but the way creators of music are paid for their work had not."
Mark Mulligan[13], from Midia Consulting, stated that if the music streaming services are struggling to be profitable, artists and record labels have to be creative and redefine their approach. Mulligan thinks a new generation of artists is already ready to live with that, the older ones should follow them and "reinvent themselves".

2.2 Users' attitudes towards technology acceptance and evaluation

The current study aims to understand what drives consumers to purchase online content, namely music streaming services. Hence, it is important to acknowledge some concepts regarding beliefs and attitudes towards technologies and respective acceptance. In first place it is important to assess the models and theories in the literature that better explain and enhance the understanding of those determinants and its contribution to the current study. Then, the final step is to determine which will be the contructs to be used in the current research.

2.2.1 Main Theories and Models

The Technology Acceptance Model (TAM), developed by Davis (1989), is usually regarded as one of the most important models in the area of user acceptance of technology. In TAM user acceptance is analyzed through two important technology acceptance measures, usefulness and ease of use.
TAM was adapted from Ajzen and Fishbein's Theory of Reasoned Action (TRA). The latter proposes that the antecedent of social behavior is the individual's attitude towards carrying out that behavior; in other words, people's behaviour is determined directly by the intention to act, regardless of the context. The TAM adopts TRA, but introduces perceived usefulness and ease of use as important antecedents. According to Davis (1989), the first is "the degree to which an individual believes that using a particular system would enhance his/her job performance" while the second refers to "the degree to which an individual believes that using a particular system would be free of physical and mental efforts". But the main conceptual difference between both is noted by Davis (1986; cited in Chen et al., 2002): TRA is "designed to explain virtually any human behavior" while TAM was designed "to provide an explanation of the determinants of computer acceptance (…) across a broad-range of end-user computer technologies and user populations." Therefore, user's perceptions determine attitudes towards a system.
Various studies, which used TAM, showed that this model is consistent and a good predictor of users' actual technology usage (Davis, 1989; Davis et al., 1989; Adams et al., 1992; Cheong and Park, 2005). For example, Adams et al. (1992) reproduced the analysis of Davis (1989) to demonstrate the validity and reliability of both instrument and measurement scales, providing empirical evidence on the connections between

[13] Cited by Arthur in *The Guardian*, January 2015

usefulness, ease of use and respective technology use. Despite that, there are situations regarding user acceptance of technology in which TAM was not so accurate. As Wang (2008) stated, in the context of online content services, many users may be reluctant to use for-fee information service even if it useful for them. TAM's perceived usefulness only taps the perceived benefit component, omitting the perceived cost. To solve this issue, many revisions or models were addressed, like the revised TAM proposed by Wang (2008) which replaces perceived usefulness with perceived value.

Another model that suits this kind of approach is the value-based adoption model (VAM) proposed by Kim et al. (2007). The VAM model explains customers' online service adoption from the value-maximization perspective, and it was developed to overtake the weaknesses of the TAM model in explaining new technology adoption, such as mobile internet. Since it was recognized that satisfaction itself is no longer enough to explain the adoption of a technology, in this model perceived value of mobile Internet service is a main determinant of user adoption and is determined by two cost beliefs (perceived fee and technicality) and two benefit beliefs (usefulness and enjoyment). Given that, VAM captures two important dimensions, monetary and nonmonetary sacrifice components, and utilitarian and hedonic benefit components (Roostika, 2012).

Technology Readiness Index (TRI) is also a good predictor of user acceptance of new technologies. Proposed by Parasuraman (2000), is a multiple-item scale with sound psychometric properties and refers to "people's propensity to embrace and use new technologies to accomplish goals at home life and at work". This model lies on a coexistence of positive and negative beliefs towards new technologies that can be defined into four dimensions: optimism as "a positive view of technology and a belief that it offers people increased control, flexibility and efficiency in their lives"; innovativeness as "a tendency to be technology pioneer"; discomfort as "a perceived lack of control over technology" and insecurity as "distrust of technology and skepticism about its ability to work properly" (Parasuraman, 2000). Hence, optimism and innovativeness are seen as drivers of technology readiness, whilst discomfort and insecurity as inhibitors.

These models (namely, models that can explain consumers' readiness and consequent degree of intention to purchase in an online environment) are presented in Table 4.

Table 4: Main theories and models

Model	Definitions	Studies (Date)
Technology Acceptance Model (TAM)	User acceptance explained by perceived usefulness and perceived ease of use. Valid in predicting an individual acceptance of several corporate IT	Davis, 1989; Davis et al., 1989; Adams et al., 1992; Cheong and Park, 2005
Value-Based Adoption Model (VAM)	Explain customers' mobile internet service adoption from the value maximization perspective. Addresses the utilitarian and hedonic benefits components, and the monetary and nonmonetary sacrifice components	Chu and Lu, 2007; Kim et al., 2007; Wang, 2008; Wang et al., 2012
Technology Readiness Index (TRI)	Measure customers' propensity to embrace new technologies and use new technologies to achieve goals in home life and at work	Parasuraman, 2000

2.2.2 Relevant definitions according to literature

Though the models presented in the last chapter are based in different approaches to users' technology acceptance, it is still possible to identify some common and/or similar constructs. The main concepts involved and relevant for this study are technicality, usefulness, enjoyment, perceived value and perceived fee. Major definitions and correlations between these constructs will be presented in this chapter.

Zeithaml (1988) classified the perceived sacrifice of consumers in two types, monetary and non-monetary. Focusing in the second type, Lovelock (2001; cited in Chu and Lu, 2007) defines non-monetary costs as physical and psychological efforts. Following this description, Chu and Lu (2007) came up with perceived ease of use so as to explain this cost. However, Wang et al. (2012) changed this concept of perceived ease of use and present technicality to clarify the existence of non-monetary costs. According to them, this concept includes "the extent to which a customer believes that using an online content service would suffer from physical, mental and learning effort" (p. 203). They opt for this solution to be consistent with the benefit-sacrifice framework that was presented in their research. Therefore technicality is basically "perceived non ease of use", what despite being different from perceived ease of use, explains the same belief, just from a different angle. Kim et al. (2007) also define technicality as "the extent to which M-internet is perceived as being technically excellent in the process of providing services" and referred that this concept is determined by system reliability, connectivity and efficiency. Zeithaml (1988) includes other components to non-monetary costs, such

as time costs, effort costs, psychological costs and convenience costs. Hence, Kim et al. (2007) proposes technicality as the sum up of all non-monetary costs (Table 5).

Table 5: Examples of studies on technicality

Definition of Technicality	Studies (date)
As the extent to which a customer believes that using an online content service would suffer from physical, mental and learning effort	Davis, 1989; Kim et al., 2007
Determined by system reliability, connectivity and efficiency	Kim et al., 2007

Regarding the relationship of this construct with others, Davis (1993) - which used the concept of perceived ease of use - stated that the ease to use the system can enhance the respective sense of usefulness (Table 6). Morris and Dillon (1997) confirmed this idea in a research about user perceptions on software utilization. Teo et al. (1999) and Cheong and Park (2005) also accepted and corroborated this idea.

The field of online content service that is addressed in this study is music. Thus, a great sense of enjoyment and playfulness is involved and, as such, it is essential to understand the impact of technicality in that belief. Teo et al. (1999) referred that since a person perceives that a system is difficult to use, consequently less fun they will get from that and their usage will decrease. This is a view also supported by Moon and Kim (2001), who add the fact that a system which is easier to use will be less threatening to the individual, who can thus perceive more fun using it (Table 7).

Table 6: Examples of studies on perceived usefulness

Definition of Perceived Usefulness	Studies (date)
As the extent to which consumer believes that using an online content service would fulfill his/her purpose	Chu and Lu, 2007; Davis, 1989
Instrumental in explaining user adoption of hedonic information systems	Van der Heijden, 2004

Table 7: Examples of studies on perceived enjoyment

Definition of Perceived Enjoyment	Studies (date)
As the extent to which the activity of using an online content service is perceived to be enjoyable in its own right, apart from any performance consequences that may be anticipated	Davis et al., 1992
Instrumental in explaining user adoption of hedonic information systems	Van der Heijden, 2004

Perceived value has a positive influence on purchase intention (Chu and Lu, 2007; Kim et al., 2007; Lu and Hsiao, 2010) and being defined by Zeithaml (1988, p. 14) as the confrontation between perceived benefits and perceived costs.

The definitions presented below (Table 8) are intended to determine benefits beliefs (usefulness and enjoyment) and cost beliefs (technicality and fee) as antecedents of perceived value in the context of online content services. Previous studies proposed to classify benefits as utilitarian and hedonic (Babin et al., 1994; Babin and Darden, 1995). Wang et al. (2012) distinguishes both, being utilitarian benefits task-related, cognitive and extrinsic and derived by consumers from the performance of the product/service, whereas hedonic benefits are emotionally and intrinsically evaluated and consumers can derive them from the process of product/service usage. Following the utilitarian-hedonic framework proposed by Kim et al. (2007), perceived usefulness is an extrinsic and cognitive factor, in other words, consumer's evaluation of the online content service performance, and perceived enjoyment is an intrinsic and affective factor, thus, the fun or delight provided by the online content service experience.

Perceived value has a positive impact on purchase intention (Chu and Lu, 2007; Kim et al., 2007; Lu and Hsiao, 2010). Zeithaml (1988) stated that if the perceived value is the consequence of a confrontation between benefits and sacrifices is natural that the value perceived from that result in intention to purchase, greater the first, greater the second and the opposite. Sweeney et al. (1997) reinforces this idea, enhancing the role of the value perceived by customers in their willingness to buy in the field of retail markets.

Table 8: Examples of studies on perceived value

Definition of Perceived Value	Studies (date)
Function of a "get" component (benefits a buyer from a seller's offering) and a "give" component (buyer's monetary and nonmonetary costs of acquiring the offering)	Parasuraman and Grewal, 2000
As a consumer overall perception of online content services based on the considerations of its benefits and sacrifices needed to acquire and use it	Zeithaml, 1988
Positive influence on purchase intention	Chu and Lu, 2007; Kim et al., 2007; Lu and Hsiao, 2010

In terms of costs, as said before, they are classified into nonmonetary and monetary sacrifice (Zeithaml, 1988). Regarding the first type, they were already explained as antecedents of usefulness and enjoyment. Monetary sacrifice is the consumer's financial payment for the online content service (Wang et al., 2012) and is represented by perceived fee which is the comparison between product/service benefits with the cost of using it (Cheong and Park, 2005).

Lee (1999) stated that if the cost has a negative impact on customers' budget, it also has a negative influence on their intention to "patronize" the service. By the same token, Liao and Cheung (2001), in a study that analyses the consumer attitudes towards

Internet-based e-shopping, found that price has a great influence on customer's willingness to buy in e-shops. Finally, Cheong and Park (2005) also deemed perceived fee as a direct determinant of intention to purchase. On Table 9 are presented some examples of studies on perceived fee.

Table 9: Examples of studies on perceived fee

Definition of Perceived fee	Studies (date)
As the extent to which a customer believes that using an online content service is expensive	Kim et al., 2007
Comparison between product/service benefits with the cost of using it	Cheong and Park, 2005
Customers' monetary sacrifice	Jacobby and Olson, 1977; Monroe, 1973
Negative influence on purchase intention	Liao and Cheung, 2001; Cheong and Park, 2005

2.2.3 The role of demographics

The role of demographics when dealing with user acceptance of a given technology is crucial in a study like this. Several attempts have been made to ensure a more complete and efficient explanation about the importance of demographic factors when assessing the effectiveness of user acceptance. Pagani (2004) proposed to study the consumer adoption of third generation mobile multimedia services, and through that, she found out that indeed, the importance of determinants such as perceived usefulness and perceived ease of use is different by age groups or segments. For instance, she pointed out that, usually, people aged between 18 and 24 are the so-called "innovators" since are more motivated to try new things and to live other experiences while valuing low cost and convenience. Also Spacey et al. (2004) emphasized the differences of usage between men and women and exposed the fact that the access to internet might not be "gender-neutral", favoring men. However, sometimes, the tendency is to believe that most part of the demographic differences arise from the cost factor e. g. it is the cost who determines whether or not a person has more or less access to the internet (Hoffman et al., 2000). Despite that, some other authors and studies show the opposite, claiming the role of cost is not the main one and that demographic differences are carried out by other factors. Although recognizing that cost, in fact, may be a strong inhibitor, Lenhart et al. (2003, p. 33) claim that other factors, such as physical access or busy lives can have influence. Lack of time, lack of knowledge, literacy and skills to use the internet and even lack of desire (especially in older people) are crucial factors.

In fact, is doubtless that some differences among some groups of people can exist when accessing to internet. Lee (2010) referred to that as the "digital divide" who naturally called the notion of "haves and have-nots" which is reflected in differentiation in terms of gender, age, income, race, political and cultural nature. Nevertheless, that disparity tends to decrease. Due to the democratization of the internet access, many families have access to internet at home. The multiplication of platforms to access, such as

smartphones, tablets or phablets has prompted the usage and blurs the divergence between groups. Schools and workplaces have been encouraging people to contact with internet and have online experience regardless the gender or age (Lee, 2010).
Therefore, the current study aims to assess how this difference is reflected in the context of online content services like music. Given the aforementioned democratization of access to internet, it is believed that these divergences are shrinking, although it can still be revealed in some groups.

2.2.3.1 Age

There are evidences about the relationship between age and technology acceptance (Ford et al., 2001; Spacey et al., 2004; Kiel, 2005). Usually, older people feel less comfortable when dealing with new technologies and in situations where they have to control several aspects regarding software to get what they want. Adamson and Shine (2003) findings show that older people feel that technology is more dehumanizing, therefore, young people tend to adopt new technologies earlier, as noticed Pagani (2004).
Some more specific aspects of this discrepancy between younger and older people have been analyzed. Hertzog and Hultsch (2000) posited that older people tend to have the perception that their cognitive capabilities to learn are reducing over the years. Corroborating this statement, Porter and Donthu (2006, p. 1001) revealed that this can create anxiety among older people, preventing them to learn how to use internet. Besides that, Charles and Carstensen (1999) claim that the lack of social network can be a major factor that inhibits older people, since the older they are, less willing they will be to get information through new social contacts.
Morris and Venkatesh (2000) in their investigation about individual adoption of technology in the workplace, using the theory of planned behavior, compared young workers and older workers in terms of their decisions. The results portrayed a more decisive role of technology in the decisions of younger. They found out that older people are more influenced by subjective norms and perceived behavior control. The authors conclude that organizations must be aware of the different age segments when delivering support mechanisms for their employees.
However, there are some authors who do not agree with this perspective. Pope-Davis and Twing (1991), in an attempt to study the effects of age on attitudes towards computer usage, conclude that age has no meaning in computer-anxiety and in terms of computer confidence the older people are, in fact, the ones who present more confidence toward computers. Therefore, they found out that age does not play an important role when explaining technology readiness. Rosen and Weil (1995) through a survey assessing the use of 32 consumer business and entertainment technology devices, posited that, usually, adults use more complex functions on their computers than younger (games not included). On Table 10, the aforementioned findings are referred.

Table 10: The role of age on technology user' acceptance

Findings	Study(Date)
Older people's perception of reducing cognitive capabilities to learn	Hertzog and Hultsch (2000)
Technology is dehumanizing for older people	Adamson and Shine (2003)
Young people as "innovators"	Pagani (2004)
Lack of social network as inhibitor for older people	Charles and Carstensen (1999)
Younger people more influenced by attitude toward using technology	Morris and Venkatesh (2000)
Age has no meaning in computer-anxiety	Pope-Davis and Twing (1991)
Adults use more complex functions on their computers than younger	Rosen and Weil (1995)

2.2.3.2 Gender

Most findings suggest that usually the relationship of men and women toward technology and more specifically with the internet has not been the same through the years. For example Faja and Trimi (2008) suggest that in terms of online privacy men's and women's behavior does not differ too much, however, the same does not happen when it refers to the influence of these privacy issues on the online purchasing behavior. But, over the years, it has been acknowledged that women are in disadvantage regarding men, namely in terms of usage rate and attitudes towards technology (Sherman et al., 2000).

Teo and Lim (1996) tried to assess gender differences in factors influencing PC usage in undergraduate students of business administration and identified differences in constructs like "image", "ease of use", "job fit" and "voluntariness", nevertheless, factors such as "usefulness", "trialability" and "complexity" were found to have no impact. The authors interpreted these results explaining that although recognizing usefulness on PC, women tend to view PC's as less easy to use than men. Besides that, interestingly, women tend to perceive using PC's more prestigious than men, which can be translated in more willingness to learn.

Venkatesh and Morris (2000) explain gender differences "in the context of individual adoption and sustained usage of technology in the workplace". Technology usage decisions of men are mainly influenced by their perceptions of usefulness while women are more influenced by perceived ease of use and subjective norms.

Interestingly, recent researches have shown that gender differences are shrinking and it is not that easy to define any type of diversity. Luan, Fung and Atan (2008) prompted with the view of gender disparities run a study among student teachers and the results showed no difference in terms of internet usage and the attitudes towards internet were positive regardless the gender.

Table 11: The role of gender on technology user' acceptance

Findings	Study(Date)
In terms of online privacy, men's and women's behavior does not differ too much	Faja and Trimi (2008)
Men access internet more than women and have a more positive attitude towards technologies	Sherman et al. (2000)
Women tend to view PC's as less easy to use than men. Women tend to perceive using PC's more prestigious than men, which can be translated in more willingness to learn.	Teo and Lim (1996)
Technology usage decisions of men are mainly influenced by their perceptions of usefulness while women are more influenced by perceived ease of use and subjective norms	Venkatesh and Morris (2000)
Attitudes towards internet were positive regardless the gender.	Luan, Fung and Atan (2008); Shaw and Gant (2002); Ono and Zabodny (2003)
Women are more receptive, find more useful and easy to use new information technologies than men	Li and Lai (2011)
Different life stages cause diverse gender inequalities	Helsper (2010)

By the same token, Shaw and Gant (2002) did not find any difference in terms of attitudes towards online activities, despite that, they pointed out that, provided that male are more comfortable with internet use and female more willing to use internet for communication, the two effects can compensate each other. Ono and Zabodny (2003) reported similar conclusions, referring that in terms of gender an inequality in internet access is something that does not exist. However, they should not forget to remind that frequency and intensity of internet usage still remains, being women in disadvantage. Li and Lai (2011), through a study about internet banking acceptance, also found out that women are being more receptive than men to new information technologies, and in addition to that, they also perceive it more useful and easy to use. No less interesting is the article run by Helsper (2010). In this research she attempt to assess gender inequalities in internet access over different life stages. For example, she refers that gender inequalities are smaller in young people, and factors such as occupation and marital status can play an important role defining these inequalities. Table 11 summarizes the findings presented.

2.3 Similar Studies

To strengthen the literature review and in order to present practical example of the industry, models and definitions addressed, some similar studies are analyzed. In first place the researches about the models, followed by studies about technology acceptance and finally the ones regarding specifically to the digital music field.

2.3.1 Similar studies using TAM in online contexts

Cheong and Park (2005) proposed to examine the motivations and the behavioral aspects behind the mobile internet acceptance in Korea. It was employed the Technology Acceptance Model (TAM) since it has included two important concepts in the context of the technology acceptance, the usefulness and ease of use.
The authors referred that this model has been through some adjustments since tried to accommodate the specificities of their research. Ease of use was hypothesized as antecedent of usefulness and attitude toward mobile internet, usefulness explains the attitude and the intention to use mobile internet and the attitude the intention to use. Then, the authors also introduce some novelty to existent model because in their view, internet has become something from which we take fun and can have a central role explaining the behavioral intention to use, and given that, this is something that needs to be present in researches of this type. Hence, playfulness is something that is positively influenced by ease of use and antecedent of attitude and intention to use the system. The experience is also an important factor in this research. The more experience people have, the better. The authors hypothesize that an individual who is increasingly familiar with mobile internet can have a better perception about its ease of use. On the other side, the perceived price is also deemed has having a possible impact on attitudes towards mobile internet and the respective intention to use. The authors thought that it would be interesting to assess the influence of the customers' perceived price in their behavioral intention and how it is developed. Finally, the quality of the system itself and the contents is also investigated; having both positive impact on perceived usefulness and perceived ease of use (Figure 2).
The findings suggest that, as expected, attitude toward the technology has a big influence on the respective behavioral intention to use. Perceived usefulness and perceived playfulness have also their role explaining the intention to adopt, but less when compared to the overall attitude toward the technology. The authors also stated that concepts such perceived playfulness and perceived price should be included in TAM in future studies, since they proved to be consistent in predicting the behavioral intention to use. Especially playfulness, that proves to be more influential than the TAM's original perceived ease of use. Regarding the last one, it was found as being explicative of both usefulness and playfulness, however, has a weak effect in the attitude towards mobile internet, compared to the other two. Besides that, is strongly influenced by system quality and individual's experience. Concerning the contents and system quality constructs, both have a great influence in usefulness and playfulness, though, the first has more impact than the second.

This research addresses other interesting perspectives to the TAM. By including other constructs, such as playfulness, content and system quality, the authors are trying to strengthen the model and consequently their study. Alongside that, other relationship between the constructs were proposed and supported what enriches the investigation and give different possibilities for future researches. Despite being very useful in predicting the intention to adopt or purchase a given online content, with the constant dynamic associated to new technologies, the TAM has become relatively weak in explaining what really drives the behavioral intentions of the users. As such, new supported and validated adjustments and revisions to the model are essential. Managerial implications for service providers were also taken into account. Consequences and future actions are analyzed and will be the basis of future considerations.

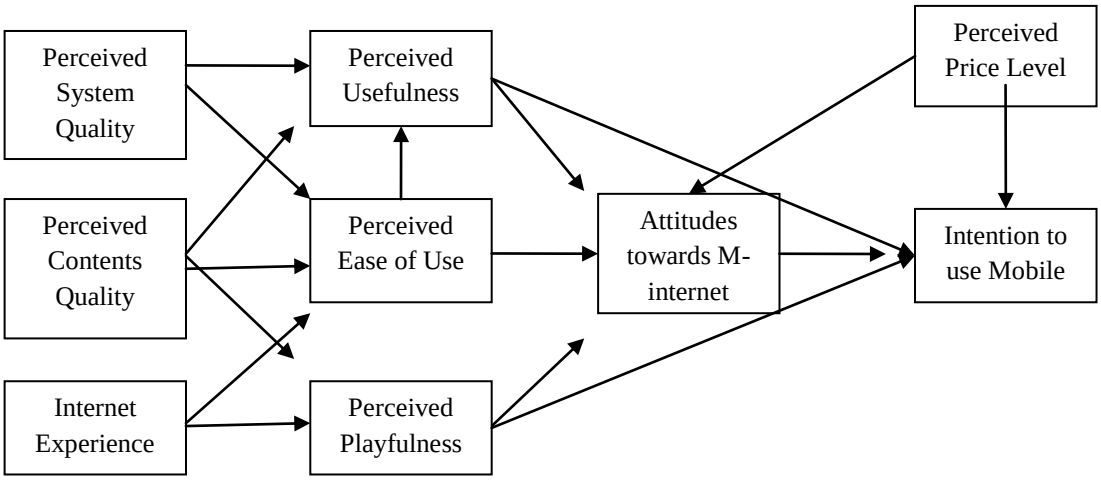

Figure 2: Research Model - Cheong and Park (2005)

2.3.2 Similar studies using VAM in online contexts

Kim et al. (2007) comes up with a study about the adoption of mobile internet as a new Information and Communication Technology. They justify this research with the quick growth of internet users, e-commerce and usage of mobile devices. In fact, in 2007, the number of users of mobile internet already exceeded those who used stationary internet. Up until that time, only Technology Acceptance Model (TAM) was unanimous to explain user acceptance of new technology. According the authors, this model emphasizes the impact of external variables (like system design features) on behavior having as mediators the "Usefulness" and "Ease of use". However, the authors state that, being created to explain technology adoption in an organizational environment, TAM is weak to explicate the adoption of new technology for personal purposes since does not have a construct that represents the overall assessment of the users. Thus, taking this into account, the Kim et al. (2007) suggest another model, as an upgrade to TAM, the Value-based Adoption Model (VAM). The VAM entails a comparison

between benefits and sacrifices so as to explain the adoption intention, having the perceived value as mediator. Therefore, in this research, this benefit-sacrifice framework is considered, being the benefits, the utilitarian (usefulness) and hedonic (enjoyment) and the sacrifices the non-monetary (technicality) and monetary (perceived fee). These are the antecedents of perceived value, which explains the adoption intention of mobile internet as it is possible to see on Figure 3.

The results show the validity of VAM. All the hypothesis were supported, being curious the fact that the sacrifice components have a greater contribution to perceived value than the benefits. The authors justify that, stating that mobile internet is a new technology, and, given that, customers are more concerned with the possible time, effort and money that they will have before thinking about the benefits that they will collect. Perceived value was also found to have a positive influence on adoption intention, mediating the effect of its antecedents. Interestingly, the authors go further and also apply the TAM in their research. They use usefulness and ease of use (with the respective adaptation from technicality) as direct antecedents of adoption intention. It was found that while VAM explains 35.7% of the variance in adoption intention, TAM only explains 13.1%.

This study brought a new perspective to the understanding of user acceptance since it addresses adoption from both service consumer and technology user points of view. It constituted the first attempt to try an upgrade to the TAM, who only explains the intention to purchase or adopt through usefulness and ease of use and in specific contexts. Other determinants were added so as to strengthen the analysis of consumers' behaviour. Moreover, perceived value was used as a general concept to mediate the relationship between the constructs of the benefit-sacrifice framework and intention to adopt. The findings also allow conveying the idea that increasingly the users are focused on the sacrifices that need to deal with before collect the benefits. It is demonstrated by the great impact of perceived fee on perceived value. Therefore, this research appears to be determinant to a deeper understanding of the most explicative and efficient models in the field of customers' perceptions and intentions regarding technology adoption and already presents some patterns of behavior interesting to analyze.

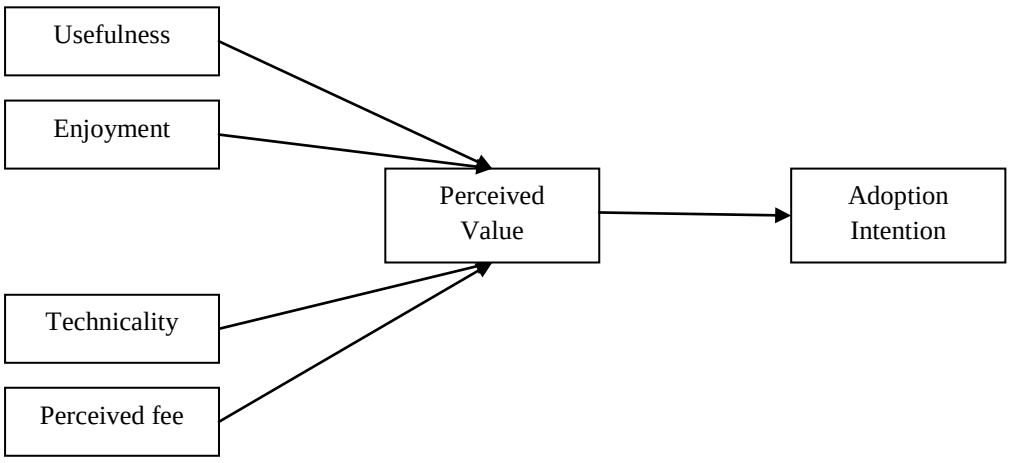

Figure 3: Research Model - Kim et al. (2007)

2.3.3 Similar studies about technology acceptance in online contexts

Agarwal and Karahana (2000) put the focus of users' technology acceptance theories in the problematic of understanding and managing user reaction to information technology. In order to do that, the emphasis is put on explaining the paths through which technology behavior is manifested. To achieve that goal, the authors use a conceptual construct called cognitive absorption (CA), described as a "state of deep involvement with software" and set it as an antecedent of perceived usefulness and perceived ease of use, essential beliefs in technology use. According Agarwal and Karahana this construct is highlighted into five dimensions: temporal dissociation, inability to register the passage of time; focused immersion, other attentional demands are ignored; heightened enjoyment, pleasurable aspects of the interaction; control, user's perception of being in charge of the interaction; curiosity, extent to which the experience arouses an individual's sensory and cognitive curiosity (Malone, 1981). Hence, CA is included behavioral beliefs about technology use as consequences and the individual traits of personal innovativeness and computer playfulness as antecedents (Figure 4).

Results gave evidences that the posited relationships and the direct relationship between CA and behavioral intention to use were supported. This study concludes that, given that technology developments are focusing in richer and more appealing interfaces, the importance of pleasurable and enjoyable experience of themselves might dominate as predictors of usage intentions and the technology should make feel users as being in the command of the interaction with IT.

The implications are important to understand how user act in the context of new information technology, however, this study has some cons, like the focus on young people, which are more aware how to deal in technological environments, and the fact that the survey was run in a workplace context, in which extrinsic motivators are more important than intrinsic motivators; that should be pointed out. But, in spite of that, the article gives more insights about the possible antecedents of behavioral intention to use IT and consequently to come up with other perspectives about the context of online content services.

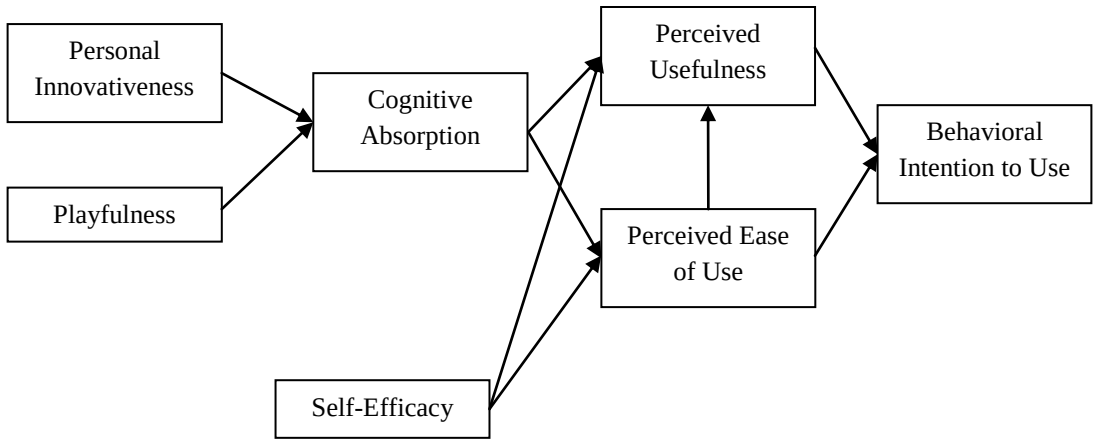

Figure 4: Research Model - Agarwal and Karahana (2000)

Again, the question of technological upgrades is addressed in an article by Parasuraman (2000), who assessed the customers' readiness to deal with new technologies. To emphasize the role of technology in all the changes in the relationship customer-company, Parasuraman proposed a pyramid model in service marketing that consists in understanding that effective marketing of services require focus on internal and interactive form, besides the traditional external (product, price, promotion and place). But, by themselves these two concepts does not include technology, so, in order to solve this concern, the author incorporates technology as a new dimension into the triangle model. The article focuses on the technology-employee and technology-customers links of the pyramid, describing the development of the Technology Readiness Index (TRI) and discussing the scale's psychometric properties and potential applications. According Parasuraman, technology readiness is an "overall state of mind gestalt of mental enablers and inhibitors that collectively determine person's predisposition to use new technologies", being TRI a multiple-item scale (with sound psychometric properties) that can help companies to evaluate their customers' readiness to deal with computer/internet-based technology.

The results show that although people are generally optimistic regarding technology also experience significant amount of insecurity in it. In addition to that, interestingly, technology optimistic and innovators experience the same level of anxiety as those experienced by individuals who are much less enthusiastic about technology. This conclusion recalls the notion presented by Mick and Fournier (1998) about "technology paradoxes" who stated that consumers simultaneously nourish favorable and unfavorable views, such as control/chaos, freedom/enslavement or engaging/disengaging about technology-based products and services.

In the article, TRI is used to understand what drives customers in the relationship with technologies and how they deal with that. The results collected are consistent with previous studies (Mick and Fournier, 1998) showing that exists a kind of paradoxical relationship. There can be extracted considerable views, into the field of the current study. TRI can be used in diverse areas; to be precise, the relationship between customer and technology is the one that should be highlighted as being relevant to the present study. For companies, understand readiness of their customers to accept new technologies can help to build stronger technology strategies, manage the systems that are most appropriate to different types of customers or, according the author, the pace at which the system could be implemented.

2.3.4 Similar studies about purchase intention on online content services

A study connected to purchase intention of online content services was run by Wang et al. (2012). In this article, the authors proposed to understand the factors affecting consumer intention to purchase online content services, investigating the antecedents of perceived value and exploring the moderating effects of consumers' ethical self-efficacy for online piracy on the relationship between perceived value and purchase intention, and in the purchase intention itself.

The model used in this study was the value-based adoption model (VAM) because is the one that best fit in this kind of approach. Technology Acceptance Model (TAM) was also an option, but in the context of online content services, many people may be reluctant to use for-fee information even if it is useful for them, thus, this model only taps the perceived benefit component (Wang, 2008), omitting perceived monetary cost component. Therefore, VAM was used, explaining customer mobile internet service adoption from the value-maximization perspective and confronting two main beliefs, the benefit ones (usefulness and enjoyment) and the cost ones (perceived fee and technicality), see Figure 5.

The antecedents (except technicality) were proved to be consistent with purchase intention (trough perceived value) and ethical self-efficacy for online piracy also played an important role proving the positive effect on purchase intention and enhancing the positive influence of perceived value on purchase intention.

These conclusions are useful to the current research because posits consistent determinants to explain purchase intention and, from that, extract managerial implications and tips for online content services providers. Despite that, some more determinants or moderators could be used in this cost-benefit framework to strengthen the predictions regarding purchase intention in the context of online content services.

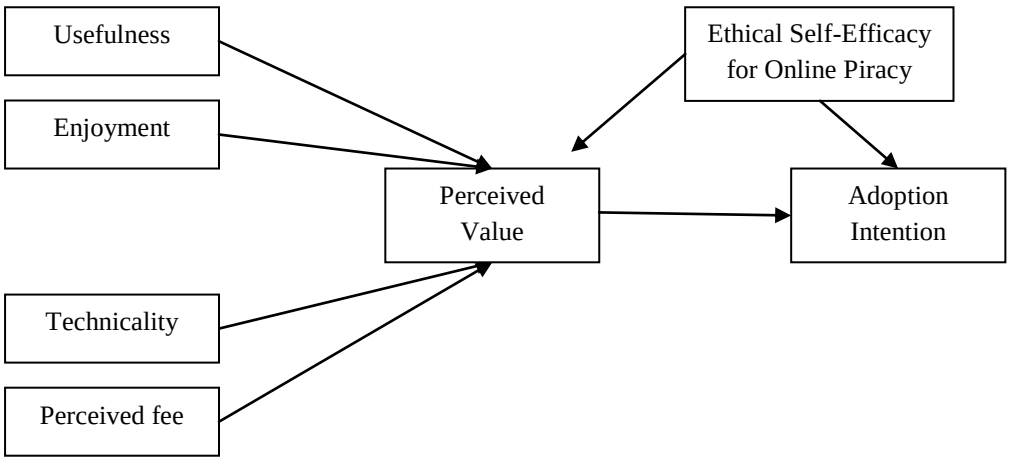

Figure 5: Research Model - Wang et al. (2012)

An article by Chen et al. (2006) alerts music providers, for the issue of unauthorized downloads of files in a peer-to-peer (P2P) environment. Lack of morality of users, especially young people, is constantly proposed as an explanation, but, according the authors, there are inconclusive evidences about this argument. Therefore, this paper presents a conceptual model of file downloading; analyzing samples drew from a questionnaire survey of P2P users in Taiwan.

Given the fact that digitalized music files keep the same quality as the original ones, they can be easily reproduced and transferred for free. Understanding of what drives purchase intention of the customers is quite crucial for music industry. As Huang (2005)

said, download music files is also a kind of music consumption. Economical utility and also fashionable status are factors, highlighted by authors, which enhance the illegal download.

Regarding the hypothesis, in this study, perceived utility, perceived differences of utility between download and CD's, the degree of fashion involvement are all positively related to the behavioral intention to download. Oppositely, the perceived difference of morality is negatively related to the behavioral intention to download. Besides that, degree of fashion involvement is positively related to the perceived utility of downloaded music and to the perceived difference of utility between downloaded music and CD's (Figure 6).

The results show that the confront between downloading music files and buying the CD, in terms of economic utility, influence the users' behavioral intention because they are mainly value-maximizers. This evaluation of economic utility was also found to be created by the need to be fashion among the peers. Moreover, the degree of morality is not related with behavioral intention to download music files. As Stallman (1995) states, P2P environments are conceived by many people as public goods, and in this sense download illegal music is not so unethical. According to the authors, these conclusions should drive providers to take actions in order to turn back to the track of success, increase their customers' utility in music consumption, satisfy customers' need of fashion (creating an image of fashion architect), decrease the costs of CD's and increase cost of mp3 files are some recommendations presented.

However, despite presenting some interesting conclusions about this subject, like the issue of morality (or lack) and economical utility, it was thought that the intense focus on young people as main consumers of music files is exaggerated and does not correspond to the actual reality. Nowadays that mindset which leads us to believe that only the teenagers are able to download music files online is blurred. Still, this article can constitute a basis to understand some other points of view about the drivers of consumption of online content services.

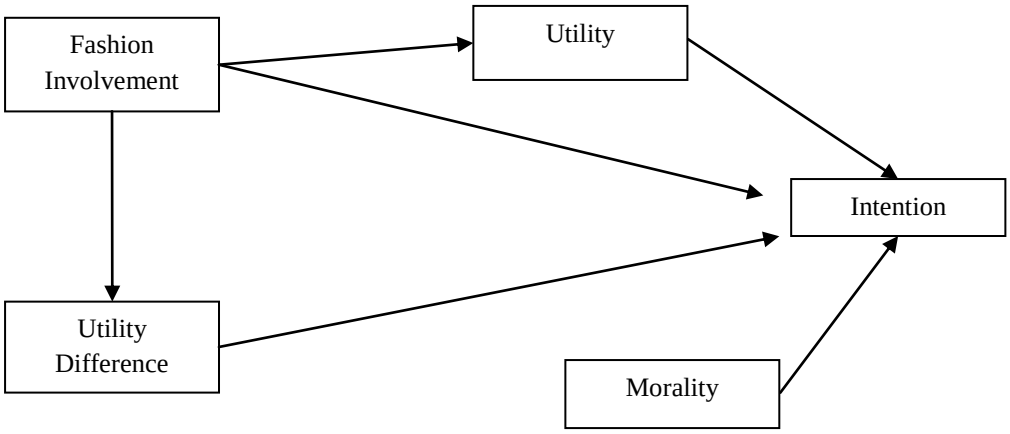

Figure 6: Research Model - Chen et al. (2006)

The following table (Table 12) contains the summary of the similar studies assessed with the most important topics highlighted.

Table 12: Similar Studies Summary

Authors	Country of study	Field	Objective	Model	Main Conclusions
Cheong and Park (2005)	Korea	Mobile Internet	Examine the motivations and the behavioral aspects behind the mobile internet acceptance in Korea	TAM	Usefulness, playfulness and attitudes towards technology have influence on the behavioral intention to use it
Kim et al. (2007)	Singapore	Mobile Internet	Adoption of mobile internet as a new Information and Communication Technology	VAM	Sacrifice components have a greater contribution to perceived value than the benefits
Agarwal and Karahana (2000)	USA	World Wide Web	Explaining the paths through which technology behavior is manifested	Does not apply	Pleasurable and enjoyable experiences dominate as predictors of usage intentions
Parasuraman (2000)	USA	Technology Readiness	Assess customers' readiness to embrace new technologies	TRI	Although people are generally optimistic regarding technology also experience significant amount of insecurity in it
Wang et al. (2012)	Taiwan	Online Music Services	Understand the factors affecting consumer intention to purchase online content services	VAM	The antecedents (except technicality) were proved to be consistent with purchase intention (trough perceived value)
Chen et al. (2006)	Taiwan	Music	Understand why or how an intention do download music files develops	Does not apply	Consumers as value-maximizers when choosing between downloading or buying the CD

3. Empirical Study

In this section the methodology and the results of the current study will be presented. Again, similar studies are highlighted. After the analysis of the concepts, theories and models, a methodological framing is quite essential to understand what were the techniques used in the respective approaches and what results have they provided. Topics such as the field of the study, the way how data collection was run, the unit of analysis and the statistical method of analysis are reported. Afterwards, all the steps of the current study are detailed so as to give a clearer idea about what is going to be done in following chapters.

3.1 Methodological aspects of similar studies

In Table 18 is possible to find some methodological aspects regarding similar studies already analyzed. It is possible to see, for instance, that all the articles used survey as the privileged source of data collection. In this kind of subject related to consumers' preferences about a given type of product or service and their readiness and acceptance of technology, surveys or questionnaires are the most powerful source to get information and assess their choices and intentions.

Cheong and Park (2005) appealed to a market research company to spread their survey, given their large online panels and experience. The respondents received a reward (e-coin) to participate in the questionnaire. 1,468 responses were received, but only 1,279 were valid to analyze. Before the test, a pre-test with IT Management students was conducted. On Table 13 the constructs and respective studies are presented.

Table 13: Measurement Items – Cheong and Park (2005)

Construct/Item	Studies (Date)
Perceived Usefulness	Davis (1989)
Perceived Ease of Use	
Attitude	
Intention to use	
Perceived Playfulness	Moon and Kim (2001)
Perceived System Quality	DeLone and MacLeane (1992)
Perceived Content Quality	Lin and Lu (2000)
Internet Experience	Hackbarth et al. (2003); Liao and Cheung (2001)
Perceived Price Level	Liao and Cheung (2001)

The study of Kim et al. (2007), regarding the adoption of mobile internet, also adapts constructs from other studies (Table 14). It was run a pre-test with mobile internet users and non-users to evaluate items such as length of the instrument, the format of the scales and questions' ambiguity and to provide recommendations. The data was collected through a survey in a public forum to graduates and undergraduates of the major universities in Singapore. The respondents received a financial incentive to

answer the questionnaire and were invited to enter their mobile phone numbers to assure they were experienced in deal with mobile internet. 161 responses were gathered. The studies that support the measurement items of the determinants are listed on the following table.

Table 14: Measurement Items – Kim et al. (2007)

Construct/Item	Studies (Date)
Adoption Intention	Agarwal and Karahana (2000)
Perceived Value	Sirdeshmukh et al. (2002)
Perceived Usefulness	Davis (1989)
Perceived Enjoyment	Agarwal and Karahana (2000)
Perceived Fee	Voss et al. (1998)
Techncicality	Bagozzi and Philips (1982)

Agarwal and Karahana (2000) used Partial Leasts Square (PLS) on their study to establish nomological validity of cognitive absorption. However, the analysis encompasses two different stages because the measure for Cognitive Absorption consisted of second order factors. The psychometric properties were assessed first and structural relationship after. The data was collected from students enrolled in a junior level statistics class in the college of business. Also, World Wide Web was chosen as a target innovation not only because it is widely used by students, but also because they use according to their own will as well as it exemplifies perfectly the characteristics of IT regarding Cognitive Absorption. Again, both constructs and scales were adapted from prior studies, as we can confirm on the Table 15. Scales to measure cognitive absorption, like temporal dissociation, focused immersion, heightened enjoyment, control and curiosity used a multi-stage iterative procedure.

Table 15: Measurement Items – Agarwal and Karahana (2000)

Construct/Item	Studies (Date)	Scales
Perceived Usefulness	Davis (1989)	4-item scale
Perceived Ease of use	Davis (1989)	4-item scale
Behavioral Intention	Ajzen and Fishbein (1980)	3-item scale
Self-Efficacy	Compeau and Higgins (1995b)	10-item scales
Personal Innovativeness in the domain of Information Technology (PIIT)	Agarwal and Prasad (1998)	4-item scale
Cognitive Playfulness (CPS)	Webster and Martocchio (1992)	7-item scale

Regarding the study about Technology Readiness Index run by Parasuraman (2000), the study sample was gathered through a national cross-section of adults chosen through a random-digit dialing from all over United States, with 1,000 interviews being made. The questionnaire was composed by a battery of 66 statements regarding their feelings and views about technology readiness (optimism, innovativeness, discomfort, insecurity). The results show the distribution of respondents' scores on the four

components of the technology readiness construct, the overall TRI and a pair-wise correlation between TRI and its components.
The next problem was to assess that scale's construct validity through other conceptual and empirical criteria. That empirical evaluation was about to analyze the connections between respondents' TRI scores and their answers to questions related with their experience and perceptions about technology-based products and services. Firstly, TRI scores segmented by ownership of eight different technology-based product-services, being the results from one-way ANOVA were assessed. Then the ANOVA results concerning the association between TRI scores and actual use of technology-based product and services were evaluated. And, finally, the ANOVA results pertaining to the desirability of 14 different futuristic or recently introduced technology-based services were analyzed.

Wang et al. (2012) focused their measures on online music services and used the Partial Least Square (PLS) approach to analyze the empirical data which was gathered in an online convenience sample in Taiwan. They employed this approach for two main reasons: does not require data to have a multivariate normal distribution and is less demanding in terms of sample size. Besides that, this approach allows the simultaneous analysis of the measurement model, structural model and interaction effects. The sample of 124 valid responses, collected trough a survey portal in Taiwan, was get through respondents with different demographic background. The measurement model was adapted from prior studies, as we can observe on the Table 16.

Table 16: Measurement Items – Wang et al. (2012)

Construct/Item	Studies (Date)
Perceived Value	Kim et al. (2007); Sirdeshmukh et al. (2002)
Perceived Usefulness	Kim et al. (2007); Chu and Lu (2007)
Perceived Enjoyment	Kim et al. (2007); Agarwal and Karahana (2000)
Technicality	Kim et al. (2007); Davis (1989)
Perceived Fee	Kim et al. (2007); Voss et al. (1998)
Ethical Self-Efficacy for Online Piracy	Kuo and Hsu (2001)
Purchase Intention	Kim et al. (2007); Davis et al. (1989)

By the same token, Chen et al. (2006) conducted a survey research using the stratified sampling method because their study should collect sample in different stage of moral development and to improve external validity. The survey was run in the biggest P2P community of Taiwan (Kuro) with over 500,000 members, a sample of 1,300 was drawn with 1,239 valid responses (response rate of 95.31%). The research collected cross-sectional data and all the items were measured on a five-point Likert-type Scale (except demographic information of the subjects, utility difference and perceived morality). Again, the constructs were adopted taking into account prior studies, as we can see on the following table (Table 17), with the respective scales.

Table 17: Measurement Items – Chen et al. (2006)

Construct/Item	Studies (Date)	Scales
Perceived Morality	Rest (1986)	Defining Issues Test (DIT)
Perceived Utility	Conner and Rumelt (1991)	5-point Likert-type items
Utility Difference	Conner and Rumelt (1991)	30 items of 7-point semantic differential scale
Intention to Download	Swinyard et al. (1990)	5-point Likert-type items
Fashion involvement	Miller et al. (1993); Shang et al. (2005)	5-point Likert-type items

On Table 18, all the methodological aspects of these six studies already analyzed are summarized on their most important and relevant items.

Table 18: Methodological aspects of similar studies

Authors	**Country of study**	**Sample Size**	**Field**	**Data Collection**	**Response rate**	**Unit of analysis**	**Statistical Analysis**
Cheong and Park (2005)	Korea	1,279	Mobile Internet	Survey	87.12%	Population who hold mobile devices	Multiple Regression Analysis
Kim et al. (2007)	Singapore	161	Mobile Internet	Survey	Not Clear	University students	Pearson Correlation Analysis
Agarwal and Karahana (2000)	USA	288	World Wide Web	Survey	Not Clear	Students enrolled in a junior level statistics class in the college of business	Partial Least Sqaure (PLS)
Parasuraman (2000)	USA	1,000	Technology Readiness	Survey	100%	National cross-section of adults	Correlation/ ANOVA
Wang et al. (2012)	Taiwan	124	Online Music Services	Survey	Not clear	Online Convenience Sample	Partial Least Square (PLS)
Chen et al. (2006)	Taiwan	1,239	Music	Survey	95.31%	Population of Kuro (biggest P2P community in Taiwan)	Structural Equation Modelling (SEM)

3.2 Research questions and Framework

The aim of this study is to fill a research gap by analyzing users' purchase intention towards online content, namely music streaming services. To achieve that goal the research questions are the following ones: (i) What are the drivers and inhibitors of consumers' intention to purchase online content services? And (ii) What is the moderating role of consumer characteristics?

To assure the achievement of this goal some steps should be taken. First of all, a thorough literature review should be done. It is essential to understand what has been done in this field. The main concepts and models used, the constructs and the methodology applied in each study are important guidelines to the present dissertation. By the same token, a review of similar studies is also a milestone that should not be undermined. Some of them provide useful concepts and models, others the methodology and the remaining ones constructive conclusions.

Following literature review the research hypotheses were formulated (Table 19). Taking into account what was grasped on the previous studies, some constructs and concepts will be analyzed in order to be included or not on that formulation. To the current study, concepts such as perceived usefulness, perceived enjoyment, perceived fee and technicality will be the basis to build the research hypothesis. In this part of the work, the possible moderators will also be examined to get the objective to evaluate the moderating role of consumer characteristics. Our goal is to examine if there are significant differences between the importance given to each decision criteria according to the socio-demographic characteristics of the consumers, namely age and gender.

Table 19: Research Hypothesis

Hypothesis	Concept	Relationship
H1	Technicality	Negatively related to perceived usefulness in the context of music streaming services
H2	Technicality	Negatively related to perceived enjoyment in the context of music streaming services
H3	Perceived Usefulness	Positively related to perceived value in the context of music streaming services
H4	Perceived Enjoyment	Positively related to perceived value in the context of music streaming services
H5	Perceived Value	Positively related to purchase intention in the context of music streaming services
H6	Perceived Fee	Negatively related to purchase intention in the context of music streaming services
H7	Age	Perceptions about music streaming services vary significantly according to age
H8	Gender	Perceptions about music streaming services vary significantly according to gender

The models to be used are in line with those addressed in the literature review, being the Technology Acceptance Model (TAM) and the Value-based Adoption Model (VAM) since these are the ones that better addresses the antecedents of perceived value and purchase intention, taking into account the monetary and non-monetary confrontation between benefits and sacrifices for a user when dealing with online content services. It is important to notice that, in the current study, the benefit components of perceived value are expressed by usefulness and enjoyment and the sacrifice is represented by technicality, as an antecedent of these two. Taking into account the special nature of the study, in which the users' perceptions in music streaming services is analyzed , it was found more useful to isolate the perceived fee from perceived value. Nowadays, the majority of streaming services have only a free tier of the service. The services with a paid option are neither very representative, nor widespread. Thus, it was thought that, perceived value does not incorporate the fee and could be more relevant and explicative to consider perceived fee as a direct antecedent of purchase intention. As such, the research framework adopted in this study is presented in Figure 7.

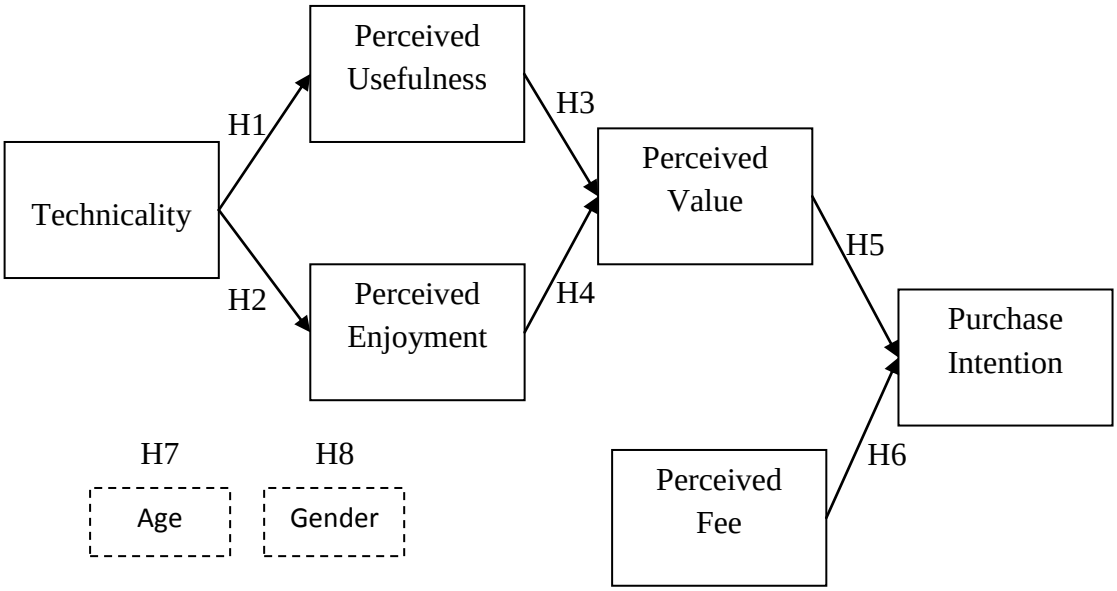

Figure 7: Research Framework

3.3 Data Collection

Data was collected through a self-administered, on-line, cross-sectional survey. In this typology of study, surveys are generally the best source to gather information. According Chu and Lu (2007, p. 144) there are two reasons to support this idea. The first is the fact that the study is trying to present a quantitative explanation about a human behavior; the second is that the sample must be large and representative to get conclusions. The use of a survey is the best option available because the respondents (once guaranteed that they stay anonymous) are more willing to provide honest answers. Besides that, surveys provide an unbiased approach to get conclusions about we want and are a good source to compare different results. This is a conclusive study, through which the main objective is to extract relationships between the variables and understand meaning that could be conveyed from those associations; as a result, a quantitative study was chosen. Finally, according Chu and Lu (2007, p. 146) there are two reasons that support the option of doing the questionnaire online, the characteristics of the study fit the online environment (online music) and the ease of widespread allied to low cost.

The measurement items were adapted from similar studies so as to ensure their validity. However, and taking into account some special characteristics of the streaming services, some items were adapted to fit in this study. Since the free tier of the streaming services is extremely attractive to users and being the percentage of paid users reduced, it was thought that all approach concerning the fee (in perceived fee, perceived value and purchase intention) should be restructured so as to produce more real and robust conclusions. To accomplish that, the respondents were directed to imagine the paid tier of the service to assess the perceived fee and think about a hypothetical usage of the same tier to evaluate their perceived value and correspondent purchase intention. That was the best way to ensure the robustness of the study and make it useful to get conclusions, since if the respondents were only thinking about the free tier of the service, the assessment of perceived fee, perceived value and purchase intention could be jeopardized. Table 20 reflects the composition of the measurement items and the respective source of measure.

Given that the survey has targeted the Portuguese population, a translation to Portuguese language was necessary to guarantee that all respondents understand the meaning of the sentences. A declaration of anonymity was also highlighted in the beginning of the survey in order to reduce the bias effect on the respondents' answers. It was also used Likert-scales ranging from 1 to 7 ("strongly disagree" to "strongly agree"). There was one sentence ("Streaming music services can be accessed instantly") that was posited in reverse direction, so as to break the pace of the respondents and make them think about their assessment. Again, it was thought to be fruitful to shuffle the order of the sentences in order to avoid an automatic set of answers, in which the respondents had to assess consecutively items inside the same construct. Instead of that, the items were mixed and the respondents never faced two items in a row belonging to the same construct.

Table 20: Measurement of Construct

Scale	Source of measure
Technicality TE1) It is not easy to use streaming music services TE2) Learning to use streaming music services is a process that requires effort TE3) Streaming music services can be accessed instantly (reversed) TE4) It is not easy to get streaming music services to do what I want to do	Wang et al., 2012
Perceived Usefulness PU1) Using streaming music services helps me to access music content more quickly PU2) Using streaming music services enables me to enhance my music appreciation PU3) Using streaming music services makes it easier to get the music information PU4) Streaming music services provide a wide variety of music PU5) Overall, the streaming services are very useful to listen to music	Wang et al., 2012
Perceived Enjoyment PE1) I have fun interacting with the streaming music services PE2) Using streaming music services provides a lot of enjoyment PE3) I enjoy using streaming music services	Wang et al., 2012
Perceived Value PV1) Compared to the effort I need to put in, the use of streaming music services is worthwhile for me PV2) Compared to the time I need to spend accessing, the use of streaming music services is worthwhile for me PV3) Overall, the streaming music services deliver me a good value	Wang et al., 2012
Perceived Fee PF1) The price to pay to access the paid tier of the streaming music services is too high PF2) The price to pay to access the paid tier of the streaming music services is not reasonable PF3) Pay to access the paid tier of the streaming music services is something that would not please me	Wang et al., 2012
Purchase Intention PI1) I would consider to use the paid tier of the streaming music services PI2) I would be willing to pay to access the paid tier of the streaming music services PI3) In a near future, I would consider purchase the access to streaming music services	Chu and Lu, 2007

Some pre-questions were made in order to frame the respondents in the study. Questions to gather demographic data and test the aptitude of them to answer the

measurement items, namely, if they used or not internet to shop or whether or not they listen to music through online music services. These questions were useful to provide access to the sentences regarding the measurement items only for people who really are familiar with the field to be assessed.

The source of data collection was an online survey, designed in an online platform provided by Google. The survey was conducted to a convenience sample of students of University of Porto, as well as professors and non-teaching staff. The survey was also made available in social networks through a network of acquaintances.

Data will then be analyzed in three different parts: (i) descriptive analysis, in to describe and summarize and the data collected through the survey and (ii) an explicative analysis to test the robustness of the hypothesis formulated before. Namely a regression model will be used to understand the readiness of the consumers to purchase online content services and an ANOVA will be developed in order to explore the effect of the moderators.

3.4 Analysis of results and Research Findings

There were gathered 440 valid responses (i.e. people that submit the survey) that constitute the general sample. However, only 318 were streaming users (i.e. answered the streaming services' path of the survey), being the ones who were considered in this study.

Table 21 presents the demographic characteristics of the sample collected. Considering streaming services users, the majority of the respondents (61.6%) were female, ageing between 18 and 25 years old (72.6%) It is essential to stress the disparity regarding the age groups. This is normal, taking into account the composition of the convenience sample. Also, given the nature of the study, it would be predictable that the younger tiers of the population would be more willing and ready to answer this kind of survey, related the music online. The conclusions to take have this aspect in consideration, namely, in terms of the generalization.

Table 21: Sample Characteristics

Characteristics	General Sample (440)		Streaming Sample (318)	
	Respondents	%	Respondents	%
Age				
15-17	21	4.8	12	3.8
18-25	325	73.9	231	72.6
26-35	52	11.8	41	12.9
36-45	21	4.8	18	5.7
46-55	13	2.9	10	3.1
55+	8	1.8	6	1.9
Gender				
Male	162	36.8	122	38.4
Female	278	63.2	196	61.6
Total	440	100	318	100

3.4.1 Measurement Model

The data collected was under a test for measure of fit. Originally, there were 23 items aiming to represent 6 constructs; however, after the aforementioned tests, this figure was reduced to just 21 items. First of all, the results from the Bartlett's test of Sphericity and the Kaiser-Meyer-Olkin (KMO) test of sampling adequacy are in conformity to what was expected and certificated the measurement model is suitable for factor analysis, according the benchmark (Hair et al., 2010), with a KMO of 0.882 (closer to 1 the better) and a p-value <0.000.

Composite measures of identified factors were unidimensional and demonstrated good scale reliability according to accepted standards (Nunnaly, 1978). All factor loadings were significant and the scales exhibited high levels of internal consistency (see Table 22). Following the benchmark of Lu and Hsiao (2009), who confirmed that a value larger than 0.6 were considered as good, it is safe to say that all items passed the test since all the respective loadings are greater than 0.6. To strengthen the test of reliability and validity of the measurement was also run the Cronbach's α (see Table 23). The higher the Cronbach's α result the better, and for that reason two items were dropped so as to assure a better result in this test. Namely in the construct "Perceived Enjoyment" (PE) PE4 (Overall, using streaming music services is interesting to me) was dropped because the α was higher without this item (0.82>0.813). By the same token, in the construct "Perceived Value" (PV) the item PV3 (Even considering the paid tier, the use of streaming music services would be worthwhile for me) was dropped. It is important to notice that, taking this withdrawn into account, the former item PV4 was renamed as PV3.

The calculation of the means (Table 22 and Table 23) was according to what was expected. "Perceived Enjoyment" and "Perceived Usefulness" got higher means what confirms the respondents deem streaming services as funny and useful. The low mean of the "Technicality" dimension shows the respondents perceive that a low grade of technical expertise is needed to deal with the software involved in these services. Regarding the last construct the "Purchase Intention", their items got low grades, what means that the respondents do not plan to buy the access to these services in the future.

Convergent validity is the extent to which the effort to measure the same concept is in harmony (Chu and Lu, 2007). To evaluate that, Composite Reliability (CR) and Average Variance Extracted (AVE) were tested (Table 22). Composite Reliability assesses the internal consistency of the measurement model, and through the observation of the Table 23 it is possible to understand and grasp a good result of the constructs evaluated, given that all of them (except Technicality, despite being close) were greater than 0.8 far from the minimum limit, proposed by Bagozzi and Yi (1988), of 0.6. AVE shows the weight of the variance each item explains and according to Fornell and Larcker (1981) should be higher than 0.5. Once again all constructs (except Technicality) produced the expected results. Regarding the construct "Technicality" the value 0.451 is close to the desired and 0.5 and for that reason it was deemed as acceptable to keep that factor.

Table 22: Loadings, Mean, CR and AVE

Measures	Loadings	Means	CR (AVE)
Technicality (α=.591)			.766 (.451)
TE1	.702	2.031	
TE2	.635	2.456	
TE3	.637	2.283	
TE4	.709	3.223	
Perceived Usefulness (α=.826)			.889 (.615)
PU1	.759	6.217	
PU2	.733	5.465	
PU3	.752	5.774	
PU4	.831	6.314	
PU5	.841	6.305	
Perceived Enjoyment (α=.820)			.894 (.738)
PE1	.846	5.456	
PE2	.867	5.585	
PE3	.864	6.097	
Perceived Value (α=.812)			.888 (.728)
PV1	.889	5.726	
PV2	.918	5.739	
PV3	.742	5.660	
Perceived Fee (α=.667)			.802 (.575)
PF1	.711	4.613	
PF2	.839	3.956	
PF3	.719	4.969	
Purchase Intention (α=.969)			.980 (.941)
PI1	.962	3.267	
PI2	.985	2.984	
PI3	.963	2.858	

Discriminant validity measures the difference between the concepts behind the constructs. In short, to support that, it is necessary that the square roots of the respective AVE are larger than the correlations between the constructs. Estimated pair-wise correlations between factors (i) did not exceed 0.85 and were significantly less than one (Bagozzi and Yi, 1988); and (ii) the square root of AVE for each construct was higher than the correlations between them (Fornell and Lacker, 1981), thus supporting discriminant validity (Anderson and Gerbing, 1988). Table 23 shows the means, reliabilities and correlations between the constructs. All the conditions were observed. The only exception was the case in which the square root of "Perceived Usefulness" was less than the correlation between this one and "Perceived Enjoyment". Here, and provided the fact that both presented similar figures (0.784 to 0.809), no changes were made.

The respondents, in average, rated the streaming services as very useful and easy to use. However, in spite of that, they see the paid tier is relatively expensive what explains the low intention to pay the access these services.

Table 23: Mean, Cronbach α, square of correlation between each construct

Construct	Mean	α	CR	AVE	TE	PU	PE	PV	PF	PI
TE	2.498	.591	.766	.451	.671					
PU	6.051	.826	.889	.615	-.488	.784				
PE	5.713	.820	.894	.738	-.443	.809	.859			
PV	5.709	.812	.888	.728	-.380	.682	.618	.853		
PF	4.513	.667	.802	.575	.114	.099	.075	.054	.758	
PI	3.037	.969	.980	.941	.034	-.014	.049	.159	-.460	.970

Note: Diagonals are the square root of AVE of each factor; the remaining figures represent the correlations

3.4.2 Hypothesis Testing

3.4.2.1 H1 to H6 test results: Regression model

The analysis of the data collected through the survey kept on with the hypothesis testing. Regression tests were used to compare a group of independent variables with a dependent variable (Hair et al., 2010). Table 24 shows some of the key predictors' outputs to the study

Table 24: Results of the regression Model

Dependent variable	Independent variables	β	t-value	Sig.	R square
Perceived Usefulness	Technicality	-0.488	-9.934	0.000	0.238
Perceived Enjoyment	Technicality	-0.443	-8.795	0.000	0.197
Perceived Value	Perceived Usefulness	0.525	7.577	0.000	0.478
	Perceived Enjoyment	0.194	2.800	0.005	
Purchase Intention	Perceived Value	0.185	3.771	0.000	0.246
	Perceived Fee	-0.470	-9.600	0.000	

Concerning the β figures and levels of significance, as expected "Technicality" (i.e. the extent to which the customers feel that using a given system can bring physical or mental effort) influenced negatively both "Perceived Usefulness" and "Perceived Enjoyment". First of all, regarding H1, results show that technical issues can affect the usefulness perceived by the user, with the relationship being statistically significant ($p=0.000<0.05$) and a β coefficient of -0.488, a high negative correlation. The interpretation of R square result also provided clues about the hypothesis consistency, having $R^2=0.238$, it means that 23.8% of the variability in "Perceived Usefulness" is explained by "Technicality". H2, which demonstrates how perceived technical issues influence the joy perceived by users in the context of music streaming services, was also statistically significant, having a level of significance of 0.000 ($p<0.05$) and a β of -0.443, a high negative correlation. Moreover, through the R square result, it is possible to say that 19.7 of the variability of "Perceived Enjoyment" is explained by

"Technicality". In conclusion, "Technicality" affected negatively and in similar strength both constructs, in spite of explaining a higher level of variability in "Perceived Usefulness".

The next part of the model was about explaining how "Perceived Usefulness" (H3) and "Perceived Enjoyment" (H4) impact the value perceived by users regarding music streaming services. The relationship between "Perceived Usefulness" (PU) and "Perceived Value" (PV), presented a significance level of 0.000 ($p<0.05$), being statistically significant with a β of 0.525. Also, the relationship between "Perceived Enjoyment" (PE) and PV (H4) was statistically significant with a significance level of 0.005 ($p<0.05$) and a β of 0.194. However, a difference must be noticed, since the influence of PU was much greater when compared to PE (0.525>0.194), representing a superior influence of usefulness than joy. In other words, users value the utility of the service over the joy that they can get with it. The interpretation of R square' results also provided clues about the consistency of the constructs to the proposed model. Having an R square of 0.478, PU and PE explain 47.8% of "Perceived Value" variance. On Table 25 the research hypothesis concerning this part are again illustrated.

Table 25: Research Hypothesis

Hypothesis	Concept	Relationship
H1	Technicality	Negatively related to perceived usefulness in the context of music streaming services
H2	Technicality	Negatively related to perceived enjoyment in the context of music streaming services
H3	Perceived Usefulness	Positively related to perceived value in the context of music streaming services
H4	Perceived Enjoyment	Positively related to perceived value in the context of music streaming services
H5	Perceived Value	Positively Related to purchase intention in the context of music streaming services
H6	Perceived Fee	Negatively related to purchase intention in the context of music streaming services

Regarding the final part of the model, as anticipated "Perceived Value" influenced positively "Purchase Intention" while "Perceived Fee" negatively. First of all, H5, which concerns the extent to which the value perceived by users about the service has impact on their intention to purchase, was tested. The relationship had a significance level of 0.000 ($p<0.05$) being statistically significant and having a β of 0.159. H6, which tests if consumers feel that the fee (or its possible existence) affect their intention to purchase, was also confirmed since the relationship presents a level of significance of 0.000, lower than 0.05 and a β of -0.470. The R square of 0.246 means that 24.6% of the variability in "Purchase Intention" was explained by these two constructs. An interesting fact to retain about these results was the superior impact on "Purchase Intention" of "Perceived Fee" than "Perceived Value", in other words, the users seem to be more influenced by the possibility to pay a fee when decided whether or not to buy

the access to the service than the value of the service itself. Figure 8 portrays the relationships.

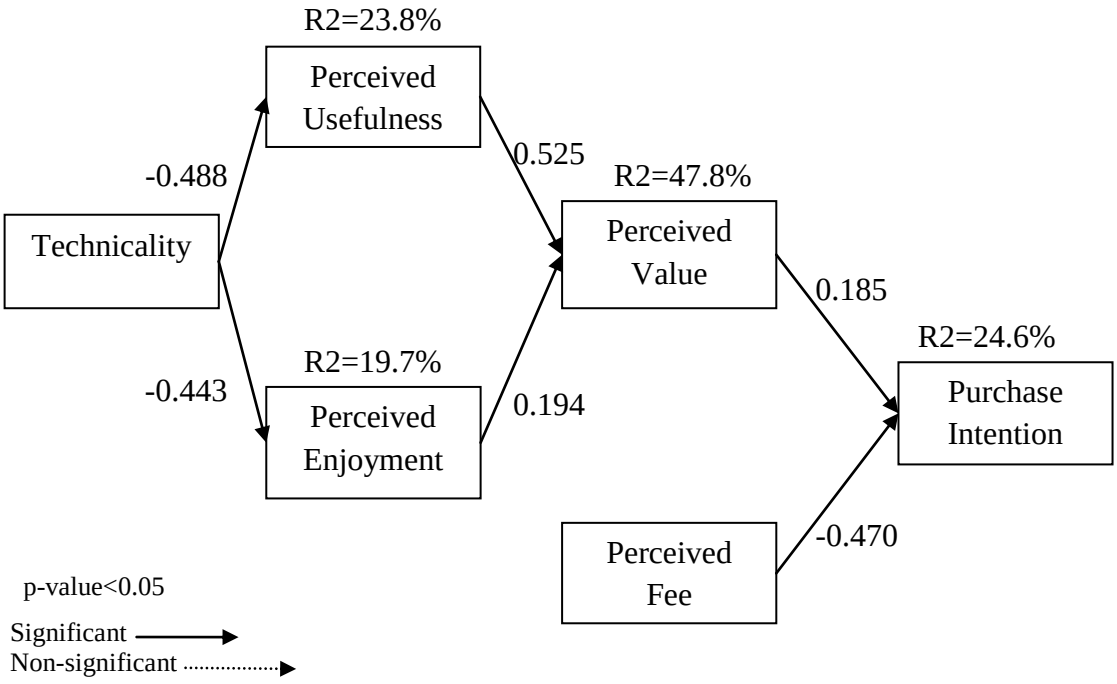

Figure 8: Hypothesis Testing Results

3.4.2.2 H7-H8 test results: moderating factors

To test the remaining hypothesis, a Variance Analysis (ANOVA) was used in order to compare the average results between different populations (Hair et al., 2010). It was intended to assess how the different perceptions about music streaming services were affected according to age and gender. Again, the significance level used was 5%.
Therefore, as it is possible to see on the Table 26 the significance levels ($p<0.05$) allowed us to say that "Purchase Intention" varies according both age and gender, while "Technicality" only varies according different age groups.

Table 26: Oneway ANOVA

Construct	Age	Gender
	Sig.	Sig.
Technicality	0.000*	0.480
Perceived Usefulness	0.249	0.455
Perceived Enjoyment	0.106	0.270
Perceived Value	0.273	0.405
Perceived Fee	0.834	0.367
Purchase Intention	0.007*	0.004*

*Significant at a 0.05 level

Then, it was necessary to know which pairs were significantly different from each other. In terms of gender, the calculations of the mean differences were easy to do, since there

were only two kinds. However, concerning the age, since there are 6 groups, it was required a post-hoc test. Stevens (2002) characterized this test as designed to situations in which "additional exploration of the differences among means is needed" after being obtained a significant omnibus F-test with a factor that consists of three or more means.

It was used a Tukey's HSD test. Despite being designed for equal sample sizes among different groups, it can be adaptable to unequal sample sizes (Stevens, 2002). This test procedure keeps alpha levels at their demand value while calculate the statistical model assumptions (i.e. normality, homogeneity, independence) (Stevens, 2002).

On the Table 27 it is possible to assess the mean differences among different age groups with regard to technicality and the respective level of significance.

Table 27: Age mean differences (Technicality)

Age	Age	Mean Difference	Std. Error	Sig.
15-17	18-25	-0.319	0.284	0.871
	26-35	-0.331	0.315	0.900
	36-45	-0.141	0.358	0.019
	46-55	-1.523	0.411	0.003
	55+	-1.127	0.480	0.179
18-25	15-17	0.319	0.284	0.871
	26-35	-0.012	0.163	1.000
	36-45	-0.821	0.235	0.007
	46-55	-1.203	0.310	0.002
	55+	-0.807	0.397	0.326
26-35	15-17	0.331	0.315	0.900
	18-25	0.012	0.163	1.000
	36-45	-0.810	0.272	0.036
	46-55	-1.192	0.339	0.007
	55+	-0.796	0.420	0.407
36-45	15-17	1.141	0.358	0.019
	18-25	0.821	0.235	0.007
	26-35	0.810	0.272	0.036
	46-55	-0.382	0.379	0.915
	55+	0.014	0.453	1.000
46-55	15-17	1.523	0.411	0.003
	18-25	1.203	0.310	0.002
	26-35	1.192	0.339	0.007
	36-45	0.382	0.379	0.915
	55+	0.396	0.496	0.968
55+	15-17	1.127	0.480	0.179
	18-25	0.807	0.397	0.326
	26-35	0.796	0.420	0.407
	36-45	-0.014	0.453	1.000
	46-55	-0.396	0.496	0.968

The mean difference is significant at a 0.05 level

Thus and only focusing on those that are significant, there are some differences among these groups. The age group "15-17" perceive less the technical complexity of the

service when compared to “36-45” and “46-55” with a mean difference of 0.141 and 1.523, respectively.

The same happened with the “18-25” age group. Again, the population who constitute this group perceived less the technicality of the music streaming service. This one, compared with “36-45” and “46-55”, present a mean difference of 0.821 to the first and 1.203 to the latter. The “26-35” age group also perceived less the technicality compared to the aforementioned groups with a difference of 0.81 and 1.192 respectively.

Regarding the mean differences with regard to purchase intention, interestingly, there is only when relationship which is statically significant (Table 28). The “18-25” age group has less intention to purchase in comparison to the “26-35” age group, with a mean difference of 0.605.

Table 28: Age mean differences (Purchase Intention)

Age	Age (comparison)	Mean Difference	Std. Error	Sig.
15-17	18-25	0.232	0.291	0.968
	26-35	-0.374	0.323	0.856
	36-45	-0.183	0.366	0.996
	46-55	0.033	0.421	1.000
	55+	-0.277	0.491	0.993
18-25	15-17	-0.232	0.291	0.968
	26-35	-0.605	0.167	0.004
	36-45	-0.415	0.240	0.515
	46-55	-0.199	0.317	0.989
	55+	-0.509	0.406	0.811
26-35	15-17	0.374	0.323	0.856
	18-25	0.605	0.167	0.004
	36-45	0.190	0.278	0.984
	46-55	0.407	0.347	0.849
	55+	0.097	0.430	1.000
36-45	15-17	0.183	0.366	0.996
	18-25	0.415	0.240	0.515
	26-35	-0.190	0.278	0.984
	46-55	0.217	0.388	0.994
	55+	-0.094	0.463	1.000
46-55	15-17	-0.033	0.421	1.000
	18-25	0.199	0.317	0.989
	26-35	-0.407	0.347	0.849
	36-45	-0.217	0.388	0.994
	55+	-0.310	0.507	0.990
55+	15-17	0.277	0.491	0.993
	18-25	0.509	0.406	0.811
	26-35	-0.097	0.430	1.000
	36-45	0.094	0.463	1.000
	46-55	0.310	0.507	0.990

The mean difference is significant at a 0.05 level

Finally, concerning the last hypothesis the conclusion was directly extracted from the ANOVA. Men were found out to have more intention to purchase the access to music streaming services than women, with a mean difference of 0.328 ($p=0.004<0.05$).

4. Discussion of results

The results collected through a survey to 318 music streaming services' users demonstrated that technicality negatively influences usefulness and enjoyment perceived by users. This two last constructs also have influence on the perceived value, but positive, as expected. Perceived value also has a (positive) impact on purchase intention, as well as on perceived fee (negative). However, the latter was found to have a superior influence. On the following paragraphs these results will be discussed and analyzed.

Technicality was regarded in this study as an antecedent of perceived usefulness and perceived enjoyment. Considering the sum up of all non-monetary costs by Kim et al. (2007), a negative impact on both constructs was expected, and it was in fact confirmed. The influence was practically the same in both constructs since they have similar correlations with technicality. In spite of that, technicality explained 23.8% of the variability in perceived usefulness and only 19.7% in perceived enjoyment, which means a slightly greater influence on the variance of the first construct. Focusing, primarily on the relationship between technicality and perceived usefulness, the results are in line with previous research. In a research about user acceptance of information technology, Davis (1993) found a strong relationship between both. In a study about mobile internet acceptance in Korea, Cheong and Park (2005) also suggest a strong connection as well as Teo et al. (1999) who have studied it as a mediator of internet usage. In the current research, technicality also has influence on perceived enjoyment; Teo et al. (1999) suggested the same relationship while Moon and Kim (2001) went further, and in a research about TAM in a World-Wide-Web context, found that perceived ease of use has a strong impact in perceived enjoyment. The findings of the current study show that, although people are increasingly more aware about how to deal with new software and innovative systems (confirmed by the low mean of 2.498 in the construct "Technicality") the non-monetary costs brought by the technical complexity of the service is indeed something that can affect the usefulness and enjoyment perceived by the users.
In addition to that, technicality was found to vary according to different age groups. This variation was particularly significant when comparing the youngest age groups ("15-17", "18-25" and "26-35") to the older ones ("36-45" and "46-55"). These findings are in line with those from Pagani (2004), who stated that determinants related with the technical ability to deal with new technologies tend to vary according age groups. In this research, about the adoption of third generation multimedia mobile services, the author nickname the youngest tier of the population as "innovators" due to their willingness to try and engage with new technological advancements or online services. Nevertheless, it is important to acknowledge that the age group homogeneity of the sample collected could have had impact on the production of further conclusions.

The next step was to assess the influence of perceived usefulness and perceived enjoyment on perceived value. The general impact is high, since both explained 47.8%

of the perceived value variability. In spite of that, the influence of perceived usefulness on perceived value is much greater when compared to perceived enjoyment (0.525>0.194). Other studies have also analyzed the relationship between these constructs and perceived value. Wang et al. (2012) suggested that the so-called utilitarian (usefulness) and hedonic (enjoyment) benefits have a great influence on perceived value, despite considering the influence of the latter higher than perceived usefulness. The same was found by Chu and Lu (2007) in a research that assessed the factors that drive music purchase intention in Taiwan. Kim et al. (2007) also supports the idea that both usefulness and enjoyment perceived affect perceived value, however, unlike the previous examples, in their study the difference between both is blurred. A different approach was followed by van der Heijden (2004) who associates directly perceived usefulness and perceived enjoyment to adoption intention (without perceived value as mediator) in a study about user acceptance on hedonic systems. The results were similar since both had a significant positive impact on the adoption intention though.

Contrasting with these studies, the current one suggests that the impact of usefulness is greater than enjoyment for the users. When using or trying a music streaming service, the users feel that is the usability of that services (and not the enjoyment provided) the main source of value. One of the premises of this research is the fact that, nowadays, the consumers, with the web, became less loyal and willing to try new products and services. Possibly, elements such as, wide variety of songs available, the possibility to build and have access to favorite playlists or the quick access to music, have more influence on the value of these services, than the joy of simply interact with them. Using a service only by the fun of using it seems to have a lower significance when it comes to assess the value of music streaming services.

Consistent with previous findings (e. g. Sweeney et al., 1997; Chu and Lu, 2007; Kim et al., 2007; Lu and Hsiao, 2010; Wang et al., 2012) perceived value has indeed a positive impact on purchase intention. However, the influence is less significant when compared to those studies. Taking as examples the studies of Lu and Hsiao (2010), who assessed the intention to pay for social network sites, and Wang et al. (2012), who studied the purchase intention of online content services, these researches presented more significant impact of perceived value on purchase intention than the current one.

The remaining antecedent of purchase intention is perceived fee. It was found a significant negative impact of this construct on the intention to purchase by users. In a study about the acceptance of mobile services, Andersson and Heinonen (2002) suggested that the fact that having a fee involved when trying a new service can prevent users from really using it. Cheong and Park (2005) also alerted to the negative influence of perceived price on the intention to use mobile internet (something that, according them, is forgotten in TAM), as well as, Liao and Cheung (2001) in a research about internet-based e-shopping. In fact the negative impact of perceived fee in purchase intention exceeds widely the positive one of perceived value. This means that, nowadays, the users are focused primarily on the existent fee (or not) of the service over their value. Everything is access-easy through the web, and there are several alternatives

(legal or illegal) for a music streaming service. Again, consumers are less loyal and willing to try new things and even if they value the service both in utilitarian and hedonic terms, this is not a warranty for the service provider because quickly everything can change due to constant technology upgrades. However, Kim et al. (2007) stated that customers are less likely to invest money in a technology they do not know well. Being music streaming services something relatively new, in the future, if the awareness is more widespread, the willingness to pay for the service can be greater.

Finally, it was also found that purchase intention can also be affected either by age group or genre. Regarding the first, a statistically significant difference was found between the similar age groups, "18-25" and "26-35". Indeed, a difference of 0.605 leads to conclusion that the younger group is significantly less willing to pay the access to music streaming services. However, being the only significant differentiation, the conclusions to be drawn should be examined with care. In terms of gender, the mean difference is 0.328 favorable to men. So, men are more willing to purchase than women. This can be related to the men's more positive attitudes towards technology than women (Sherman et al., 2000) what can be translated in greater intention to purchase. However, again, the homogeneity of the sample, namely in terms of age group, does not prompt to draw further conclusions.

5. Conclusions, limitations and suggestions for future research

5.1 Conclusions

Considering the importance given by all the players in the music industry world to aspects regarding customers perceptions about the services and the respective willingness to pay for them, this study aimed to assess the value perceived by music streaming services' users and, after taking into account the evaluation of the fee involved, understand the customers' readiness to pay to access those services.
The general insights generated by this research state that:
- Technicality, meaning the extent to which a user perceives the technical complexity of the service, has a negative impact on both usefulness and enjoyment perceived by users;
- Technicality varies significantly according to different age groups
- Perceived usefulness and perceived enjoyment have a positive influence on the value perceived by the users, however, the first surpass the second;
- Perceived value (positive) and perceived fee (negative) are predictors of purchase intention, being the impact of perceived fee much greater;
- Purchase intention varies significantly according age groups and gender.

The research model was based on previous studies and was derived from TAM and VAM, the most influential models to explain user acceptance and intention to purchase on an online environment. While TAM focuses in explain the antecedents of perceived value only by usefulness and ease of use, VAM goes further and predict value using a benefit-sacrifice framework. It was important to validate the current study taking into account the existent literature. Moreover, some similar studies were addressed so as to extract guidelines to the current one, namely in terms of concepts, conclusions or methodology.

The findings suggest significant information to music streaming services' providers and widely to the players involved in music industry (bands, publishers, record stores …). Technicality was found to have an impact on perceived usefulness and perceived enjoyment. This relationship means the extent to which the users feel that the technical complexity affects their sense of usefulness and enjoyment. The providers should be concerned in offering easier and flawless experiences in order to enhance the sense of utility and joy in their services. Aspects such as the interface's ease of use, the speed of access or the effort to learning to use are crucial to assess the degree of technicality of an online service. Providers should focus on presenting interactive and user-friendly interfaces, as well as platform support across the diverse sort of devices (laptop, smartphone, tablet …) and compatibility over the different operative systems. Moreover, other features like the sound quality, the record of listening and the creation of playlists to make easier and more effective the search task to find tracks, artists or albums, can also facilitate the users' work and help to build a sense of usefulness and fun.

In this study, perceived value was determined by perceived usefulness and perceived enjoyment. So, it matters to understand to what degree the sense of usefulness and the sense of enjoyment have influence on the value perceived by the users. Despite being both significant, the first was proved to be more influential than the latter.
Perceived usefulness is measured taking into account some aspects like the quick access to music, ease to get music information, at what extend these services can enhance the music appreciation of their users or the degree of variety of the music provided. The music streaming services providers should try to increase their consumers' utility when using their services. To do so, the developers must pay regular attention what customers really value and what are their behavior patterns. The possibilities to create playlists and receive recommendations based on the preferences are factors that can contribute to increase the perceived usefulness of customers. To do so the providers should keep developing their algorithm system, in order to personalize the users' profile taking into account their specifications. Whether or not the customers value music discovery, or prefer to have more control over music selection? Do they tend to like a wide variety of music genres or by the contrary they like to stick to similar types of songs? In addition to that, a wide and large music library has to be available as well as the social functions, where people can share their playlist and songs to their friends and other fans.

Although being found less influential to perceived value, when compared to usefulness, perceived enjoyment also plays a role. Developers should not forget to include fun aspects when designing music streaming services. In the current research, enjoyment takes into account elements such as the fun of interacting with the interface, listening to music in these services or simply enjoys using it. Listening to music is by itself a source of fun. However, some elements can be added to enhance that perception. Aspects aforementioned as determinants of usefulness can also be applied as a source of fun and enjoyment. The social media sharing, where people can share and collaborate in the creation of playlists with friends and other fans is a good example. This interactive dimension can be something from which the providers can advantage of, to build funnier services. Moreover, even the process of discovering new music or new releases through the interactivity with the system itself can contribute to enhance the sense of enjoyment when using it.

Finally, as determinants of the purchase intention, both perceived value and perceived fee have impact. However, it was found out that the negative influence of perceived fee surpasses the positive one of perceived value. In other words, despite perceiving the service as valuable, customers tend to give more importance to the fee involved. The developers of music streaming services have to find ways to dilute the effect of perceived fee if they want to reduce its influence on purchase intention. This does not mean the end of the free tier of the service; since it is through it that countless people know these services and have access to music, and by the other side, where many artists promote their work. This necessarily means that the value of the paid (premium) version needs to be improved so as to attenuate the sense of the fee involved. Some steps have been taken in this direction; there is room for improvement though. An ads-free service,

uninterrupted playlists, mobile access, option to download and listen to offline and good sound quality are some examples of valuable features. As well as provide a free-trial form premium services and an effective compatibility through different operative systems. However, other possibilities can be addressed and improved so as to maximize the value of the paid tier. Some of them could revolve around enhance the network effect with the aforementioned social media sharing of music, premières of artists and a closer relationship between them and the fans in this platform and the creation of family subscription packages.

5.2 Limitations and Future Research

Despite being conducted with rigor, this study has used a convenience sample, which reduces the possibility to generalize, namely because of the homogeneity in terms of age. Moreover, music streaming services are a relatively new kind of service to listen to music. Provided that, few studies focusing this issue are available to strengthen some conclusions. As such, qualitative exploratory studies (e. g. focus group or individual interviews with users) could contribute to a better understanding of the quantitative results.

In addition to that, there are some points which could be further developed in the future by other researchers. In spite of being confirmed as having impact on purchase intention, the perceived value influence was less than expected. So, other constructs could be addressed to assess the customers' readiness to purchase the access to music streaming services. Factors such as the sense of fashion or moderators like the academic qualifications and socio-economic situation could be used in the future.

Through other perspective, and focusing more on the music streaming service design and relationship with the users, additional research topic can be developed in the future. For example, the influence of advertising on the users' choice, free tier of the service with advertisement, paid one without. Moreover, it could be interesting to know if the budget usually allocated by consumers to buy "physical" products of music was or was not transferred to purchase online services. Finally, it could be important to assess if, with the widespread of the music streaming services, users start to allocate more money to go to live shows since the access to music was democratized and more people are able to know more bands.

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Attachments

Questionnaire

O presente inquérito surge no âmbito de um trabalho de investigação integrado no Mestrado em Gestão da Faculdade de Economia da Universidade do Porto.
Com este questionário pretendemos recolher informações sobre um conjunto de questões relacionadas com as perceções dos consumidores de música online acerca dos serviços atualmente disponíveis.
As respostas serão anónimas e confidenciais, tendo as informações recolhidas um fim exclusivamente académico. A sua colaboração é muito importante.

O sucesso deste trabalho depende, entre outros fatores, da sua colaboração em responder a todas as perguntas e da veracidade das suas respostas.

Idade

- 15-17
- 18-25
- 26-35
- 36-45
- 46-55
- 55+

Género

- Maculino
- Feminino

Costuma fazer compras/aceder a serviços online?
Supermercado, online banking, filmes, jornais, música, livros, etc. (Caso a sua resposta seja "Não" o seu inquérito termina aqui)

- Sim
- Não

Utiliza a Internet para aceder a conteúdos sobre música?
Ouvir música, ver notícias sobre música, comprar bilhetes para espetáculos, etc. (Caso a sua resposta seja "Não" o seu inquérito termina aqui)

- Sim
- Não

Utiliza serviços de música em streaming?
Spotify, Youtube, Grooveshark, rdio, Deezer, etc.

- Sim
- Não

Classifique as seguintes afirmações utilizando uma escala crescente de 1 a 7, onde o valor do 1 corresponde a "Discordo Totalmente" e o 7 a "Concordo Totalmente", respetivamente, em relação à sua opinião sobre os serviços online de música que utiliza normalmente.

- Utilizar serviços de música em streaming ajuda-me a aceder a conteúdos de música mais rapidamente
- É agradável interagir com serviços de música em streaming
- Não é fácil usar os serviços de música em streaming
- Considero que a vertente paga do serviço é muito dispendiosa

- Utilizar serviços de música em streaming torna mais fácil a recolha de informação acerca dos meus géneros musicais favoritos
- Utilizar serviços em streaming para ouvir música é algo que me diverte
- Aprender a utilizar serviços de música em streaming é um processo que requer algum esforço
- Não considero justo o que é preciso despender para aceder à vertente paga do serviço

- Nos serviços de música em streaming há uma grande variedade de música disponível
- Eu gosto de utilizar serviços em streaming para ouvir música
- É possível aceder a serviços de música em streaming instantaneamente
- No geral, penso que ter que optar por uma vertente paga do serviço que utilizo, seria algo que não me deixaria satisfeito

- No geral, os serviços em streaming, atualmente, são bastante úteis para quem quer ouvir música
- Utilizar serviços de música em streaming permite-me aumentar o meu nível de apreciação musical
- No geral, utilizar serviços em streaming para ouvir música é mais interessante que outras alternativas
- Muitas vezes não é fácil conseguir aceder ao que realmente quero através dos serviços de música em streaming

- Tendo em conta o esforço de aprendizagem, compensa utilizar o serviço de música em streaming
- Tendo em conta o tempo despendido a aceder, compensa utilizar o serviço de música em streaming
- Mesmo considerando a componente paga, compensaria usar o serviço de música em streaming
- De uma maneira geral, por aquilo que proporciona, o serviço de música em streaming tem valor para mim
- Ponderaria utilizar a vertente paga do serviço de música em streaming

- Estarei eventualmente disposto a pagar pelo serviço de música em streaming
- Considero vir a pagar pelo serviço de música em streaming no futuro